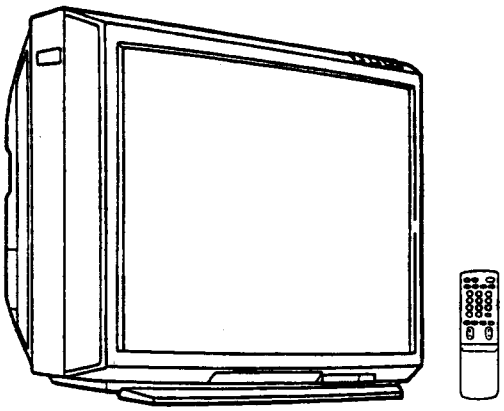
KV-K21MZ1/K25MZ1/K29MZ1

RM-845T RM-845P RM-845P

SERVICE MANUAL

Thailand Model

KV-K21MZ1
Chassis No. SCC-G70C-A
KV-K25MZ1
Chassis No. SCC-G70A-A
KV-K29MZ1
Chassis No. SCC-G70B-A



G3F CHASSIS

MODELS OF THE SAME SERIES	
KV-K21MZ1/K25MZ1/K29MZ1	
KV-K21MN11/K25MN11	
KV-K29MH11/K29MN11	

MICROFILM

TRINITRON® COLOR TV

SONY®

Specifications	KV-K21MZ1	KV-K25MZ1	KV-K29MZ1	Note
Power requirements	110-240 V AC, 50/60 Hz			
Power consumption (W)	135	165	171	
Television system	B/G, I, D/K, M			
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58			
Stereo system	A2 Stereo (German) B/G			
Channel coverage				
B/G	VHF : E2 to E12 / UHF : E21 to E69 / CATV : S01 to S03, S1 to S41			
I	UHF : B21 to B68 / CATV : S01 to S03, S1 to S41			
D/K	VHF : R1 to R12 / UHF : R21 to R60 / CATV : S01 to S03, S1 to S41			
M	VHF : A2 to A13 / UHF : A14 to A79 / CATV : A-8 to E, G to W+25, W+27 to W+84			
Antenna	75-ohm external antenna terminal for VHF/UHF			
Audio output (speaker)	7W × 2	13W × 2	13W × 2	
Number of terminal				
Video	Input : 3 Output : 1			
Audio	Input : 3 Output : 1			
S1-Video	Input : 2			Y : 1 Vp-p, 75 ohms, unbalanced, sync negative C : 0.286 Vp-p, 75 ohms
Picture tube	Super Trinitron			
Tube size (inch)	21	25	29	Measured diagonally
Screen size (cm)	54	60	68	Measured diagonally
Dimensions (w/h/d, mm)	550 × 455 × 473	619 × 514 × 500	694 × 578 × 527	
Mass (kg)	25.5	37.5	50	
Accessories				
Supplied	Remote commander (1)			
	Size R6 (AA) battery (1)			
Optional		TV stand SU-K1G		
	Magic commander RM-829, RM-848			

Design and specifications are subject to change without notice.

CAUTION

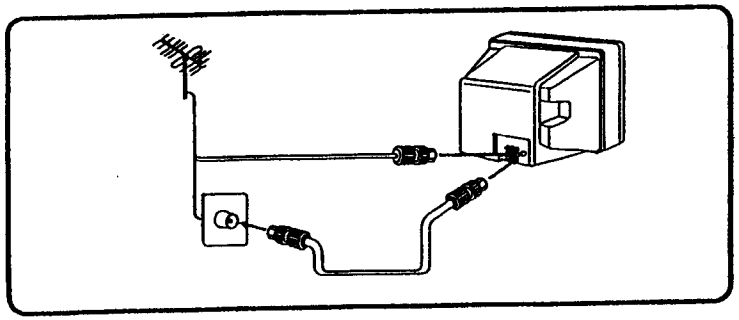
SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

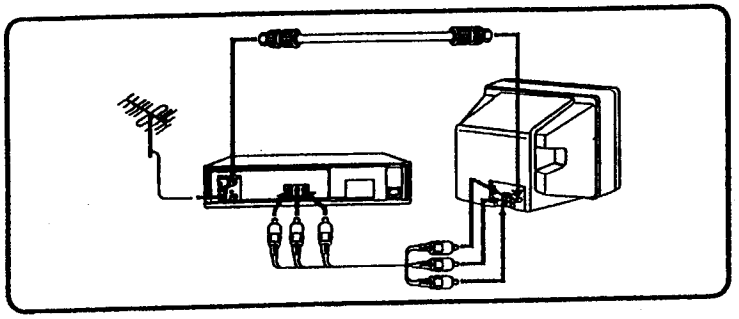
SAFETY-RELATED COMPONENT WARNING!!

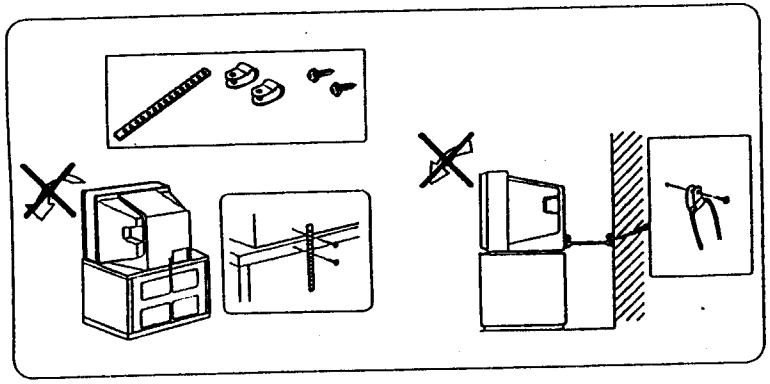
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

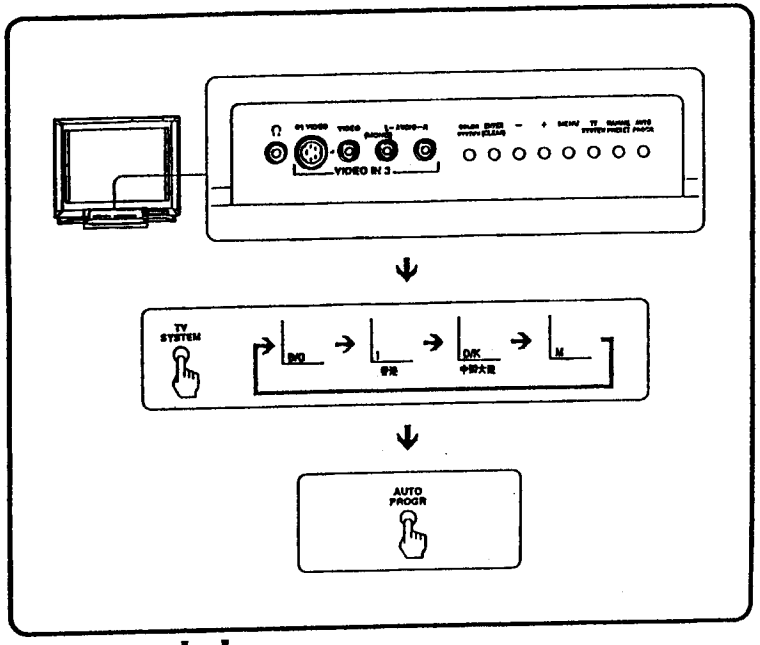
SECTION 1
GENERAL

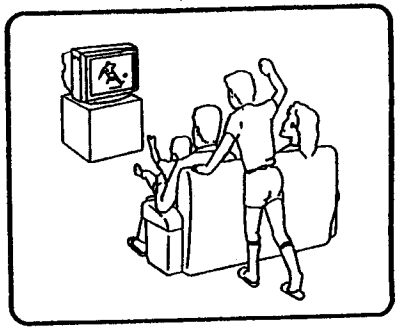


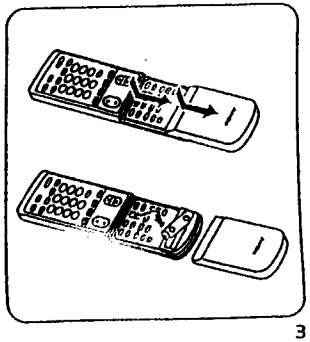




2





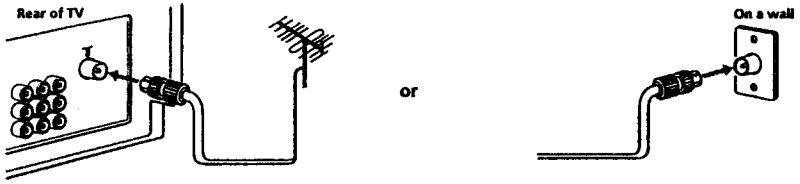


3

1-1. HOOKING UP

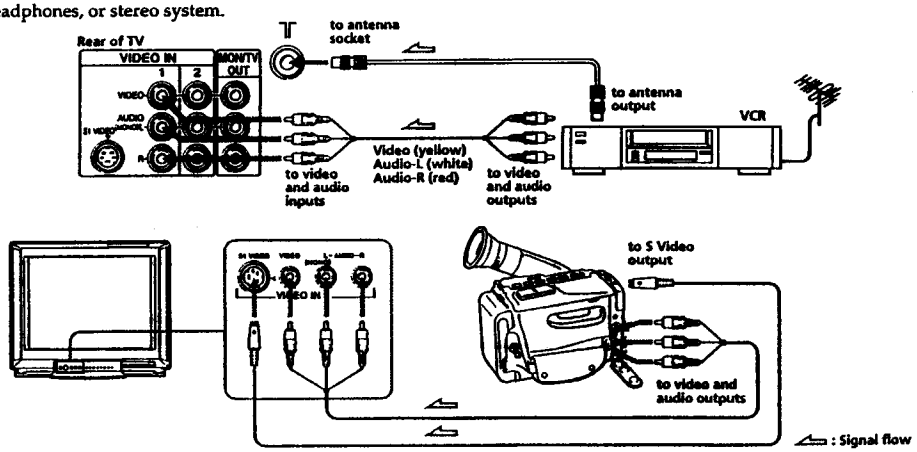
Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable.
Plug the connector into the ⊤ (antenna) socket at the rear of the TV.



Hooking up to optional equipment

You can connect optional audio/video equipment to this TV such as a VCR, multi disc player, camcorder, headphones, or stereo system.



When connecting a monaural VCR
Connect the yellow plug to VIDEO and the white plug to AUDIO-L (mono).

If both S1-Video and video signals are input
The S1-Video input signal is selected. To view a video signal, disconnect the S1-Video connection.

Note on the S1-Video signal
When inputting the S1-Video signal through the VIDEO IN 1 or VIDEO IN 3 jack, set wide mode to OFF if you do not want to display the picture in wide mode (see page 16).

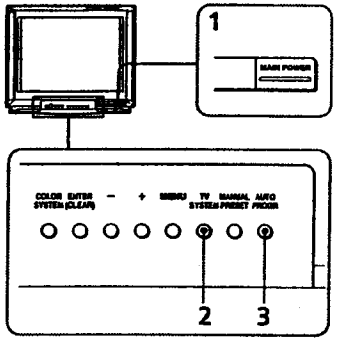
Note on the video input
When no signal is input, the screen becomes blue.

1-2. PRESETTING CHANNELS

You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or disable program positions.

Presetting channels automatically

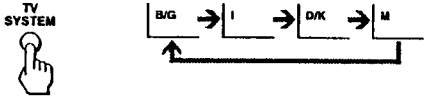
You can preset up to 100 TV channels in numerical sequence from program position 1.



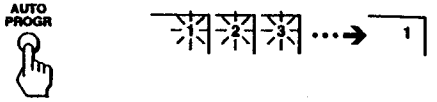
1 Press MAIN POWER.

When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

2 Press TV SYSTEM to select your local TV system.



3 Press AUTO PROGR.



To start presetting channels automatically from the specified program position

1 Press MANUAL PRESET.
2 Press TV SYSTEM to select your local TV system.
3 Press PROGR +/– to select the program position.
4 Press AUTO PROGR.

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.
Example: To preset a channel in program position 8

1 Press MANUAL PRESET.

2 Press PROGR +/– until "8" appears.

3 Press TV SYSTEM to select your TV system.

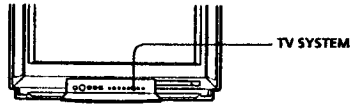
4 Press + or – until the channel you want appears.

5 Press MANUAL PRESET.

To preset other channels
Repeat steps 1 to 5.

If the TV system is not properly selected
The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

1 Press PROGR +/– to select the program position.
2 Press TV SYSTEM until the picture and sound become normal.



Note
- The setting of the TV SYSTEM is memorized for each program position.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those position when you press PROGR +/–.
Example: To disable program position 8

1 Press PROGR +/– until "8" appears.

2 Press MANUAL PRESET.

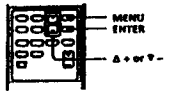
3 Press ENTER (CLEAR) on the TV.
To disable other program positions, repeat steps 1 to 3.

4 Press MANUAL PRESET.

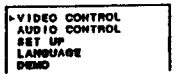
To cancel the skip setting
Preset the channel manually or automatically again.

1-3. CHANGING THE MENU LANGUAGE

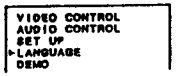
If you prefer Chinese to English, you can change the menu language. You can use buttons on both the remote commander and the TV.



1 Press MENU.

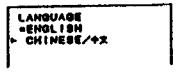


2 Press Δ + or ∇ – to move the cursor (▸) to LANGUAGE.

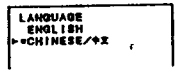


3 Press ENTER.

4 Press Δ + or ∇ – to select CHINESE.



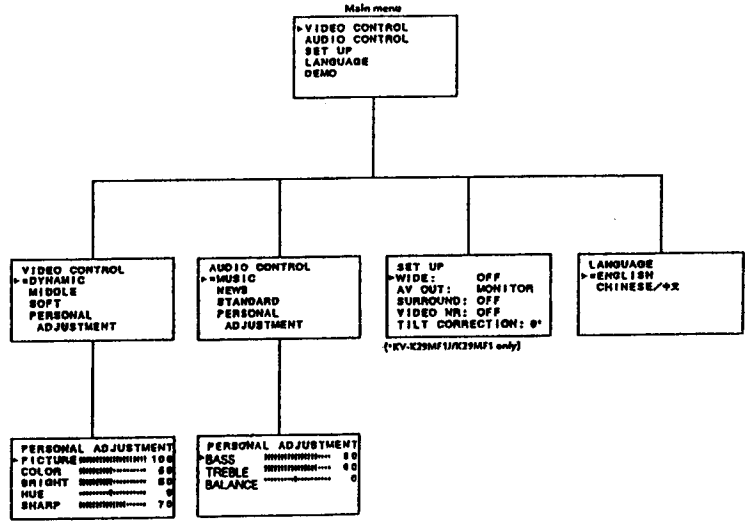
5 Press ENTER.



6 Press MENU to return to the normal screen.

1-4. INTRODUCING THE MENU

You can use the on-screen menus to set the picture quality, sound, and other settings. You can use buttons on both the remote commander and the TV to operate the menus.



Getting back to the previous menu

Move the cursor (▸) up to the first line of each menu (except the main menu), and press ENTER.

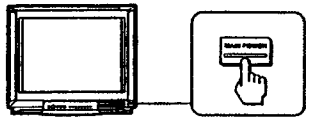
Cancelling the menu screen

Press MENU.

Notes
- When the menu is displayed, you cannot change the channel using the number buttons. Use PROGR+/– instead.
- If more than 90 seconds elapse after you press a button, the menu screen disappears automatically.

1-5. WATCHING THE TV

1 Press MAIN POWER to turn the TV on.



When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

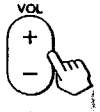
2 Select the TV channel you want to watch.

To select a channel directly
Press a number button.

To select a two-digit channel, press "-/--" before the number buttons.
For example: to select channel 25, press "-/--," then "2" and "5."

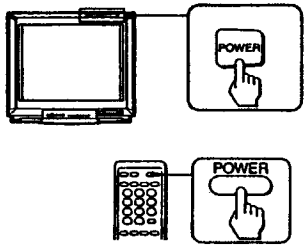
To scan through channels
Press PROGR +/– until the channel you want appears.

3 Press VOL +/– to adjust the volume.



Switching off the TV

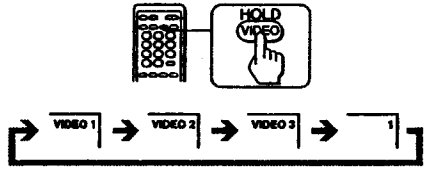
To switch off the TV temporarily, press POWER.



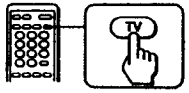
To switch off the TV completely, press MAIN POWER. If the main power is turned off in standby mode, the STANDBY indicator continues to light up for a while.

Watching the video input

Press VIDEO/HOLD.

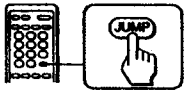


To watch TV, press TV.



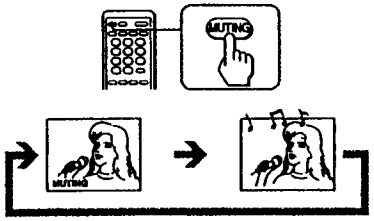
Switching back quickly to the previous channel

Press JUMP.



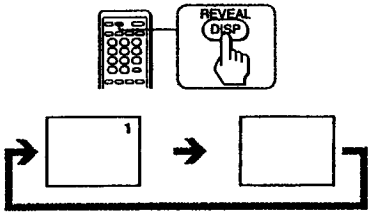
Muting the sound

Press MUTING.



Displaying on-screen information

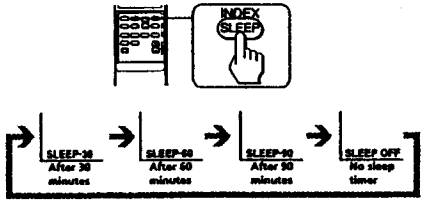
Press DISP/REVEAL.



Setting the Sleep Timer

You can set the TV to turn off automatically after the length of time you specify elapses.

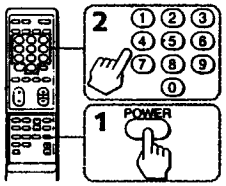
Press SLEEP/INDEX.



To cancel the Sleep Timer, press SLEEP/INDEX repeatedly until "SLEEP OFF" appears, or turn the TV off.

1-6. SETTING THE REMOTE COMMAND MODE

You can use the supplied remote commander to operate this TV and Sony video equipment, such as a VCR or multi disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.

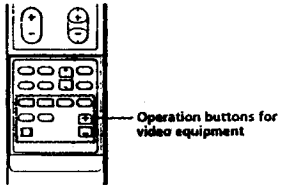


1 Press and hold the POWER button.

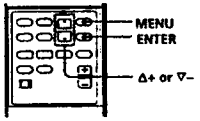
2 Press the number buttons that correspond to the remote command mode.

Mode Number buttons	Remote command mode
0 then 1	VTR1 (e.g. Beta format VCR)
0 then 2	VTR2 (e.g. 8 mm format VCR)
0 then 3	VTR3 (e.g. VHS format VCR)
0 then 4	MDP (multi disc player)

After setting the remote command mode, you can use the following buttons to operate the video equipment.



1-7. ADJUSTING THE PICTURE



1 **Press MENU.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

2 **Press Δ+ or ∇– to move the cursor (▶) to VIDEO CONTROL.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

3 **Press ENTER.**

```
 VIDEO CONTROL
▶■DYNAMIC
  MIDDLE
  SOFT
  PERSONAL
   ADJUSTMENT
```

4 **Press Δ+ or ∇– to select the setting, and press ENTER.**

Select	To
DYNAMIC	Display more contrast picture
MIDDLE	Display normal contrast picture
SOFT	Display picture suitable for movies and video games
PERSONAL	Display the picture that is adjusted using ADJUSTMENT
ADJUSTMENT	Make specific adjustments. See "Adjusting the picture precisely."

5 **Press MENU to return to the normal screen.**

Adjusting the picture precisely

You can adjust the picture quality precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

1 **Press MENU.**

2 **Press Δ+ or ∇– to move the cursor (▶) to VIDEO CONTROL, and press ENTER.**

3 **Press Δ+ or ∇– to move the cursor (▶) to ADJUSTMENT, and press ENTER.**

4 **Press Δ+ or ∇– to move the cursor (▶) to the item you want to adjust, and press ENTER.**

```
 PERSONAL ADJUSTMENT
▶PICTURE ■■■■■■■■■■■■■■■ 100
 COLOR   ■■■■■■■■■■■■■■■ 50
 BRIGHT  ■■■■■■■■■■■■■■■ 50
 HUE     ■■■■■■■■■■■■■■■ 0
 SHARP   ■■■■■■■■■■■■■■■ 70
```

5 **Press Δ+ or ∇– to adjust the item, and press ENTER.**

Item	Press Δ+ to	Press ∇– to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

6 **To adjust other items, repeat steps 4 and 5.**

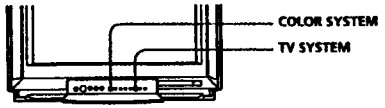
7 **Press MENU to return to the normal screen.**

Note

- You can adjust HUE for NTSC system only.

If the color of the picture is abnormal

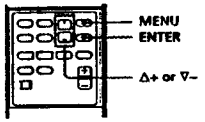
When receiving programs through the Ŧ terminal: Press TV SYSTEM or COLOR SYSTEM until the color becomes normal.



Note

- Normally set COLOR SYSTEM to AUTO.

1-8. ADJUSTING THE SOUND



1 **Press MENU.**

```
▶VIDEO CONTROL
 AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

2 **Press Δ+ or ∇– to move the cursor (▶) to AUDIO CONTROL.**

```
 VIDEO CONTROL
▶AUDIO CONTROL
 SET UP
 LANGUAGE
 DEMO
```

3 **Press ENTER.**

```
 AUDIO CONTROL
▶■MUSIC
  NEWS
  STANDARD
  PERSONAL
   ADJUSTMENT
```

4 **Press Δ+ or ∇– to select the sound that you want, and press ENTER.**

Select	To
MUSIC	Listen to music programs.
NEWS	Listen to news programs. A person's voice can be heard clearly.
STANDARD	Listen to sound other than music or news.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT.
ADJUSTMENT	Make specific settings. See "Adjusting the sound precisely."

5 **Press MENU to return to the normal screen.**

Adjusting the sound precisely

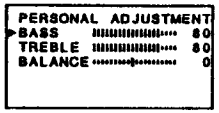
You can adjust the sound precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

1 Press MENU.

2 Press △+ or ▽– to move the cursor (▶) to AUDIO CONTROL, and press ENTER.

3 Press △+ or ▽– to move the cursor (▶) to ADJUSTMENT, and press ENTER.

4 Press △+ or ▽– to move the cursor (▶) to the item you want to adjust, and press ENTER.



5 Press △+ or ▽– to adjust the item, and press ENTER.

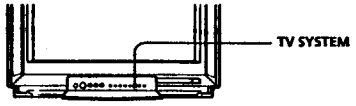
Item	Press △+ to	Press ▽– to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

6 To adjust other items, repeat steps 4 and 5.

7 Press MENU to return to the normal screen.

If the sound is distorted or noisy

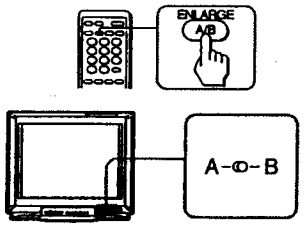
When receiving programs through the Ψ terminal:
Press TV SYSTEM until the sound becomes clear.



1-9. SELECTING A STEREO OR BILINGUAL PROGRAM

You can enjoy stereo sound or bilingual program of A2 (German) system. The initial setting is stereo sound.

Press A/B/ENLARGE repeatedly until you receive the sound you want.
The sound changes and the corresponding indicator lights up as follows:



When receiving a A2 (German) program:

Broadcasting	On-screen display	Selected sound (indicator)
A2 (German) stereo	STEREO	Stereo (A and B)
A2 (German) bilingual	—	A → B → A+B (A) (B) (A and B)

Receiving area for A2 (German) program

System	Receiving area
A2 (German)	Thailand, Malaysia, Australia, etc.

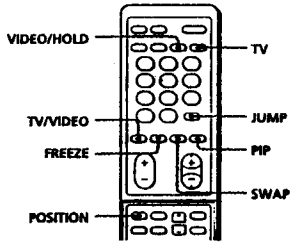
Notes

- If the signal is very weak, the sound becomes monaural.
- If the stereo sound is noisy, select "regular" or "mono." The sound becomes monaural, however, the noise will be reduced.

1-10. WATCHING TWO PICTURES SIMULTANEOUSLY

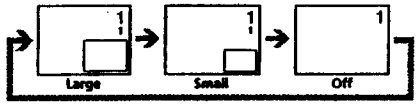
■ *KV-K25MZ1/K29MZ1 only*

With this function you can display a Picture In Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.



Displaying PIP

Press PIP.



The channels are displayed as follows:
Main screen: green
PIP screen: white

Selecting a TV program or video in the main screen

To select a TV program, press TV and select the channel.
To select a video, press VIDEO/HOLD to select a video input.

Selecting a TV program or video in the PIP screen

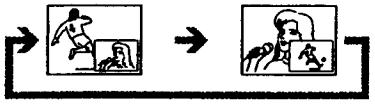
To select a TV program, press TV/VIDEO to select TV then select the channel.
To select a video, press TV/VIDEO to select a video input.

Note

- You can display different TV programs simultaneously using the VCR's built-in tuner.

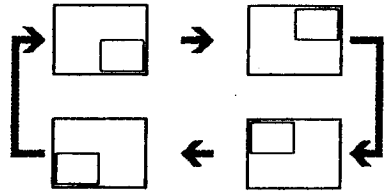
Swapping pictures between the main and PIP screens

Press SWAP.



Changing the position of the PIP screen

Press POSITION.



Freezing the PIP screen

Press FREEZE.

To restore the normal picture, press FREEZE again.

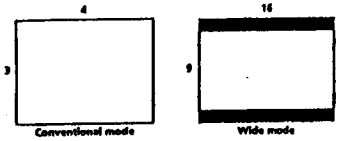
Notes

- When you display a VCR picture on the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems (PAL, PAL 60, SECAM, NTSC) on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

1-11. CUSTOMIZING THE TV (SET UP)

Setting wide mode

When receiving the signal conforming to wide mode (S1-Video signal), you can change the size of the picture on the screen.



1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.

```
SET UP
▸WIDE:      OFF
 AV OUT:    MONITOR
 SURROUND: OFF
 VIDEO NR: OFF
```

3 Press Δ+ or ∇– to select WIDE, and press ENTER.

4 Press Δ+ or ∇– to select the wide mode to suit the size of the picture you want to display on the TV screen.

Select	To
ON	Display the picture on the screen in wide mode.
AUTO	Display the picture on the screen in wide mode automatically when receiving the S1-Video signal through the S1-Video input jack.
OFF	Display the picture on the screen in conventional size.

Note
- When the picture is in wide mode, the bright lines which are used for adjusting the CRT at optimum level appear at the top of the screen.

Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV to the TV signal or the signal of the picture you are watching as a monitor.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.

```
SET UP
▸WIDE:      OFF
 AV OUT:    MONITOR
 SURROUND: OFF
 VIDEO NR: OFF
```

3 Press Δ+ or ∇– to select AV OUT, and press ENTER.

4 Press Δ+ or ∇– to select the output signal, and press ENTER.

Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

Note
- When TV is selected, the output for recording is not fixed. That is, when watching a video in the main screen and a TV program in the PIP screen and recording the TV program, the channel for recording changes if you change the channel in the PIP screen.

Selecting the surround sound

You can enjoy a surround sound effect that is like being in a music hall when receiving stereo signals.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.

```
SET UP
▸WIDE:      OFF
 AV OUT:    MONITOR
 SURROUND: OFF
 VIDEO NR: OFF
```

3 Press Δ+ or ∇– to select SURROUND, and press ENTER.

4 Press Δ+ or ∇– to turn the surround sound on or off, and press ENTER.

Select	To
ON	Listen to surround sound that is effective for stereo signals
SPACE	Listen to surround sound that is effective for monaural signals
OFF	Turn off surround sound

Reducing the noise of the picture

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a videotape that is in poor condition.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.

```
SET UP
▸WIDE:      OFF
 AV OUT:    MONITOR
 SURROUND: OFF
 VIDEO NR: OFF
```

3 Press Δ+ or ∇– to select VIDEO NR, and press ENTER.

4 Press Δ+ or ∇– to turn the noise reduction on or off, and press ENTER.

Adjusting the tilt of the picture

You can adjust the tilt of the picture if it is not aligned to the TV screen. This happens when you set the TV in the direction with effect of magnetic fields.

1 Press MENU.

2 Press Δ+ or ∇– to select SET UP, and press ENTER.

```
SET UP
▸WIDE:      OFF
 AV OUT:    MONITOR
 SURROUND: OFF
 VIDEO NR: OFF
 TILT CORRECTION: 0
```

3 Press Δ+ or ∇– to select TILT CORRECTION, and press ENTER.

4 Press Δ+ or ∇– to select the most suitable value to align the picture position.

TILT CORRECTION : -3 ← -2 ← -1 ← 0 → +1 → +2 → +3
(∇– / Δ+)

1-12. TROUBLESHOOTING

If you have any problem, read this manual again and check the countermeasure for each symptoms listed below.
If the problem persists, contact your nearest authorized service center or dealer.

Snowy picture
Noisy sound

→ Check the antenna.
→ Check the antenna connection on the TV and on the wall.
→ Check the TV system setting.

Dotted lines or stripes

→ This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

Double images or "ghosts"

→ This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

Good picture
Noisy sound

→ Check the TV SYSTEM setting.

No picture
No sound

→ Press MAIN POWER.
→ Press POWER.
→ Check the antenna connection.
→ Check the VCR connections.

Good picture
No sound

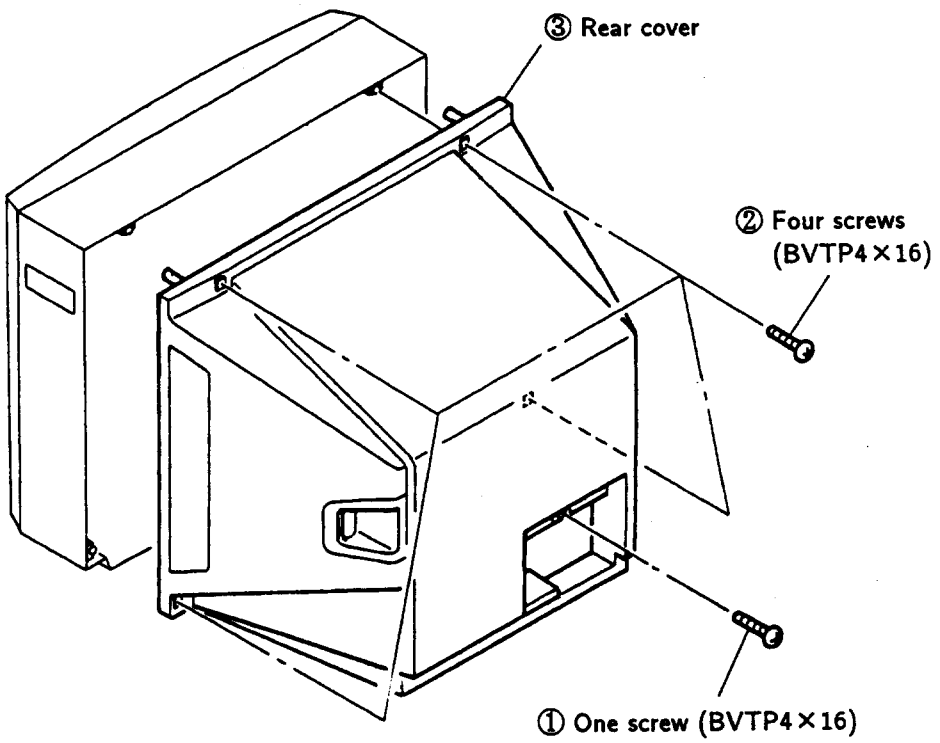
→ Press VOLUME +.
→ Press MUTING.

No color

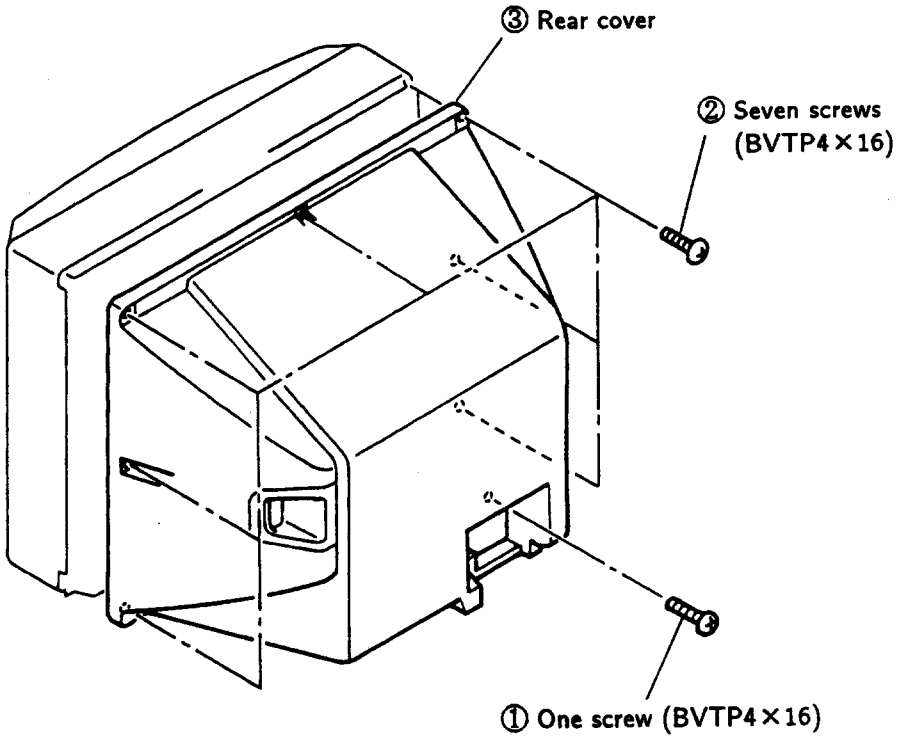
→ Adjust the COLOR level in the VIDEO CONTROL menu's ADJUSTMENT option.
→ Check the COLOR SYSTEM setting.

SECTION 2
DISASSEMBLY

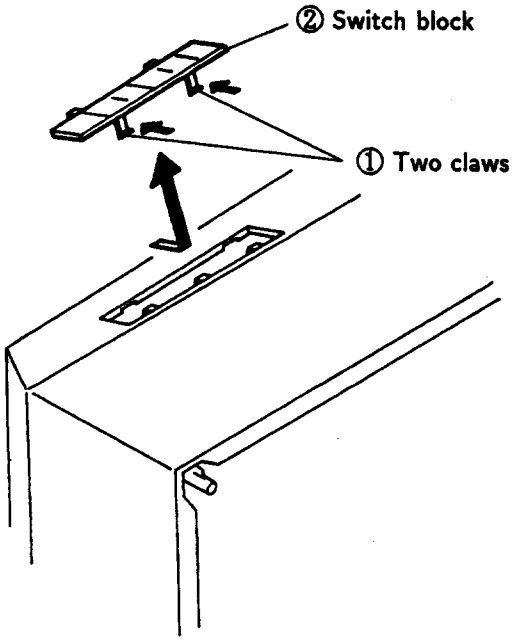
2-1-1. REAR COVER REMOVAL (KV-K21MZ1 only)



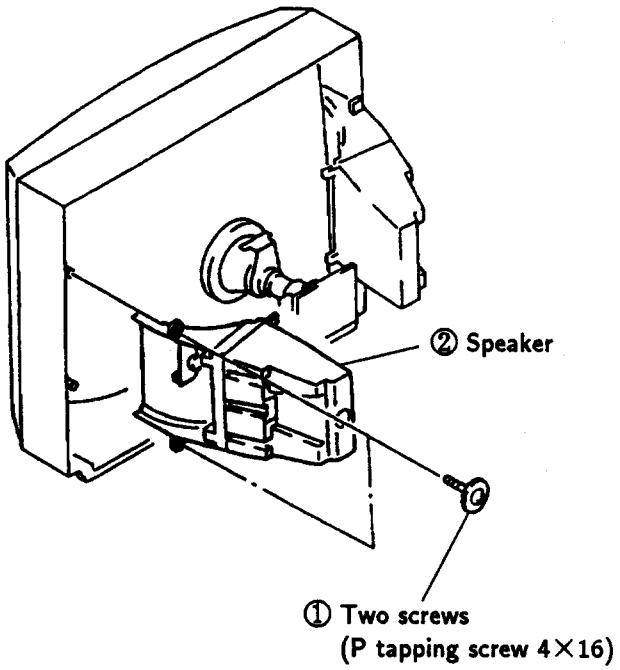
2-1-2. REAR COVER REMOVAL (KV-K25MZ1/K29MZ1 only)



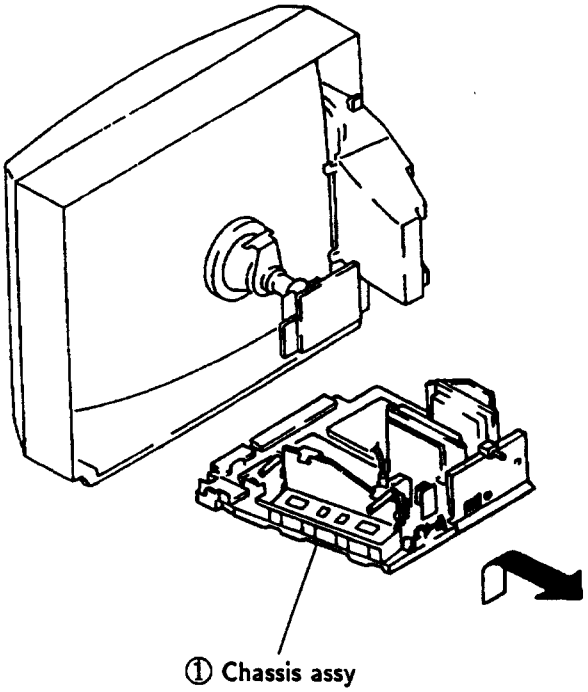
2-2. SWITCH BLOCK REMOVAL



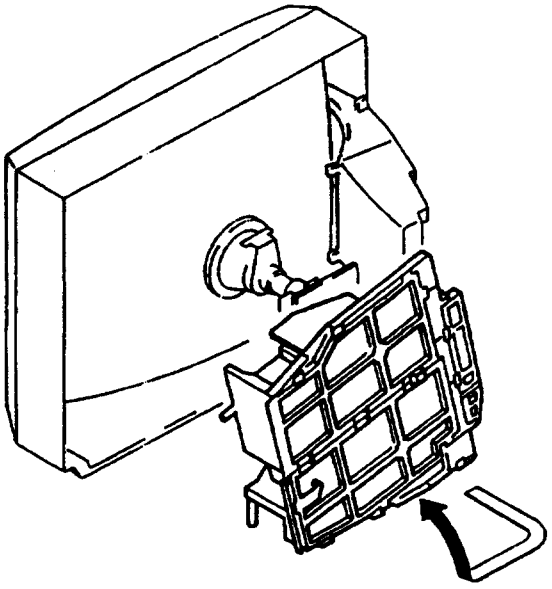
2-3. SPEAKER REMOVAL



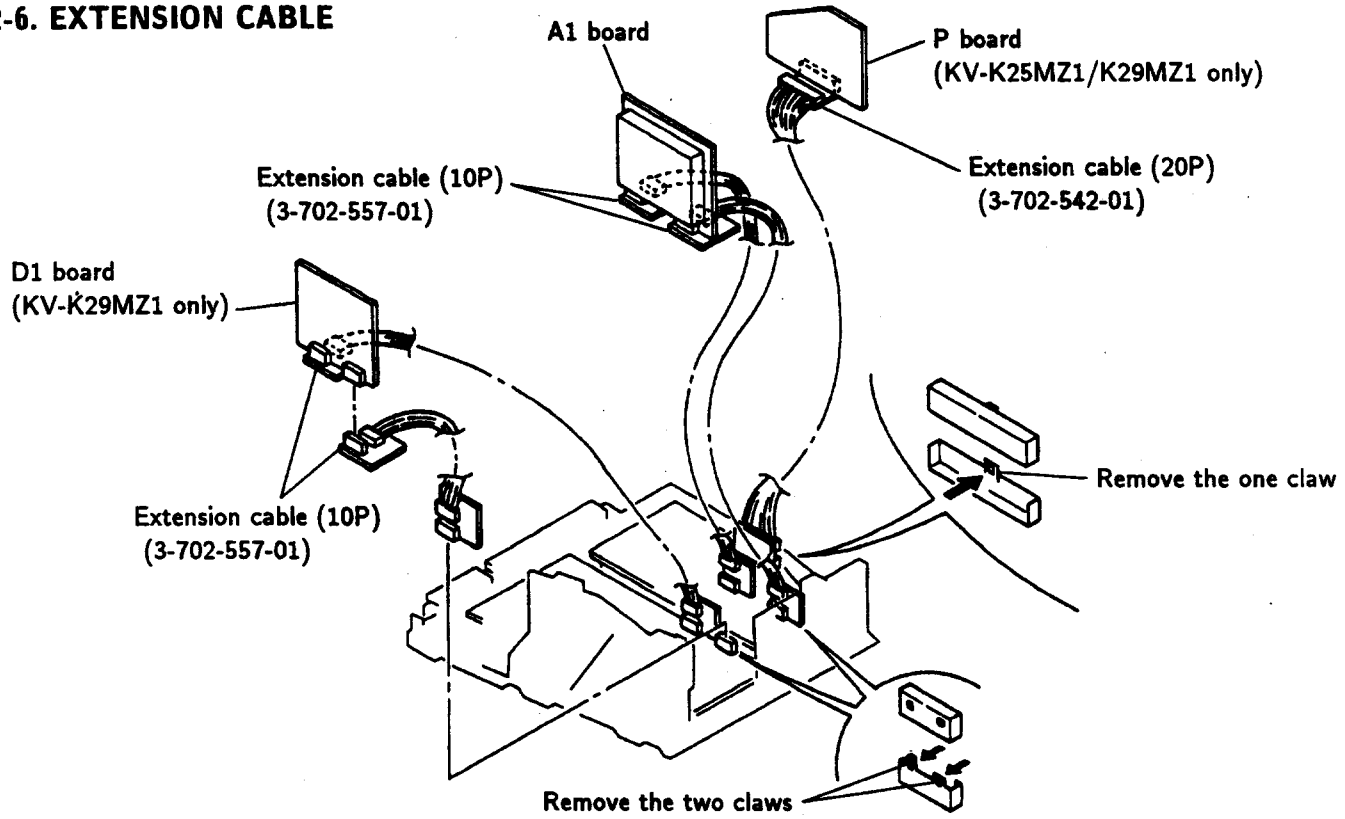
2-4. CHASSIS ASSY REMOVAL



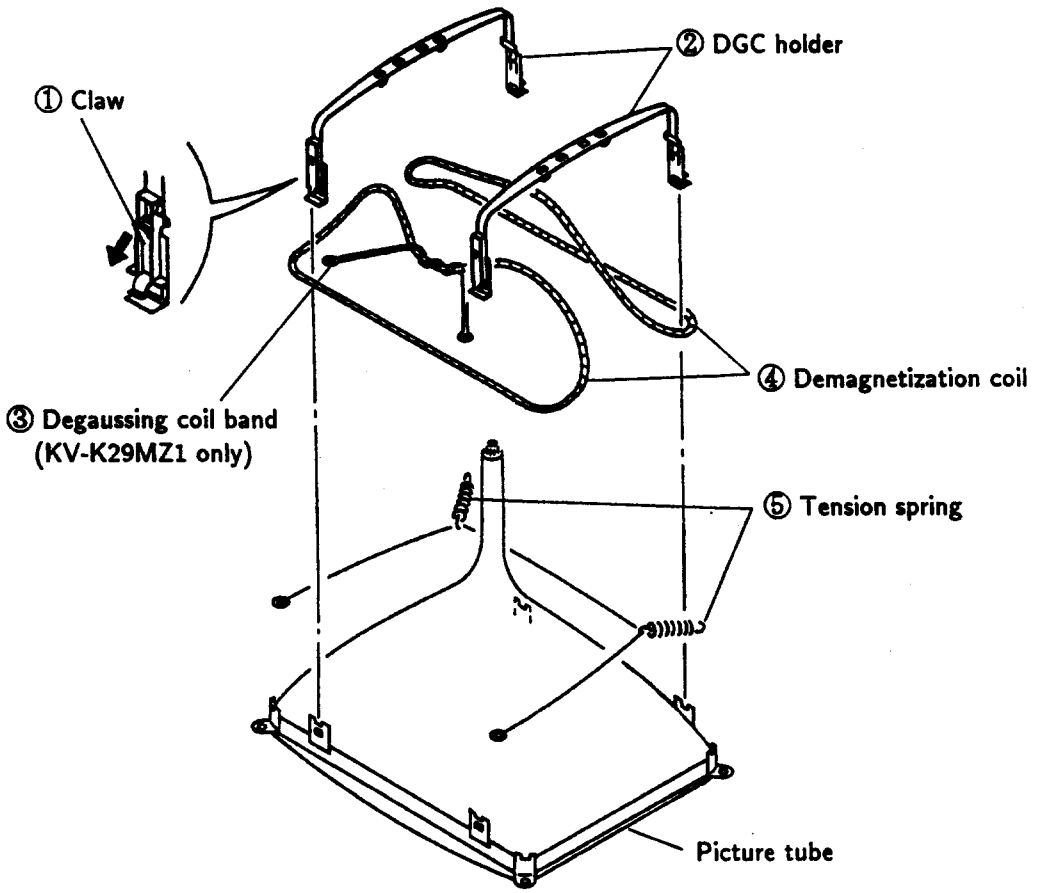
2-5. SERVICE POSITION



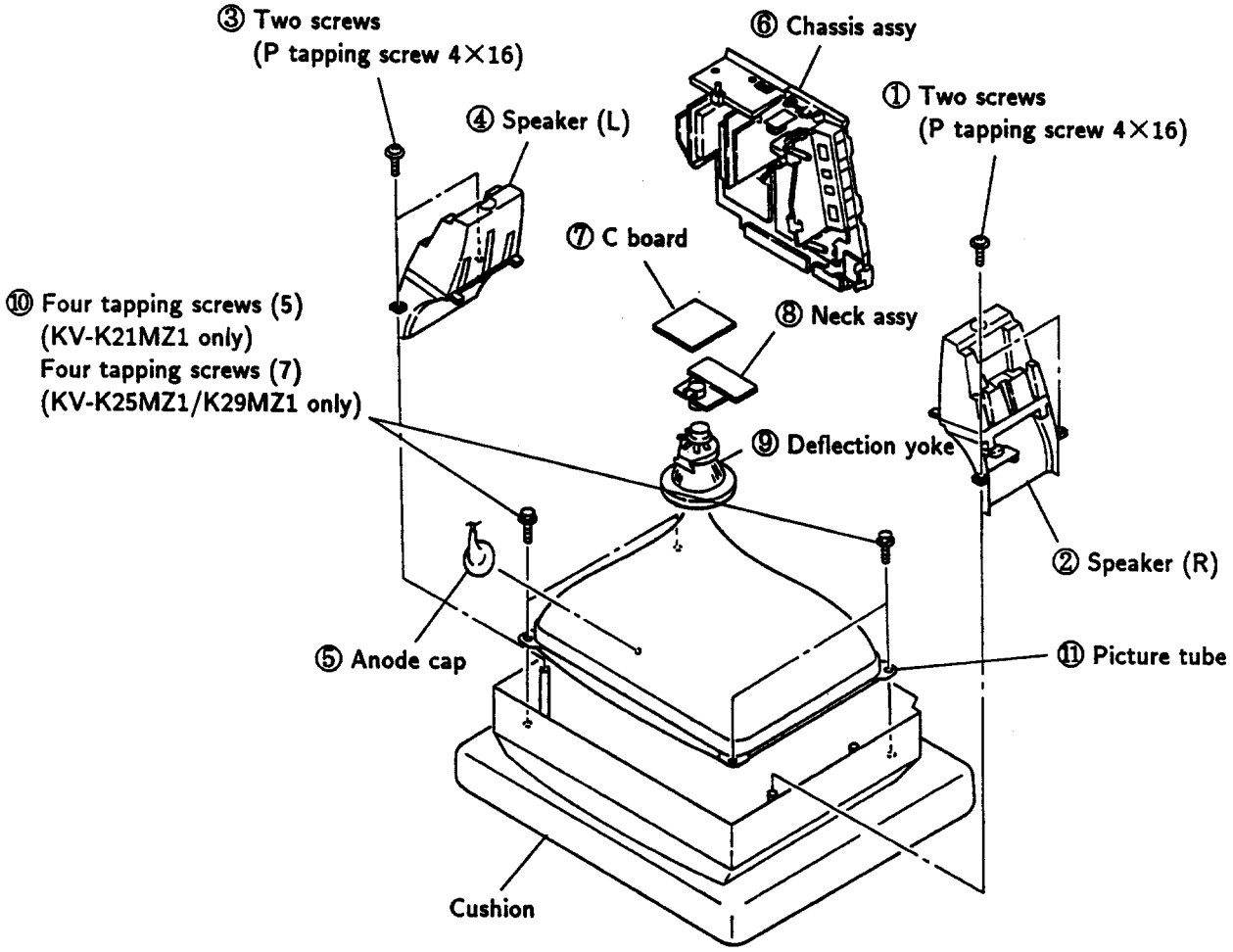
2-6. EXTENSION CABLE



2-7. DEMAGNETIZATION COIL REMOVAL



2-8. PICTURE TUBE REMOVAL

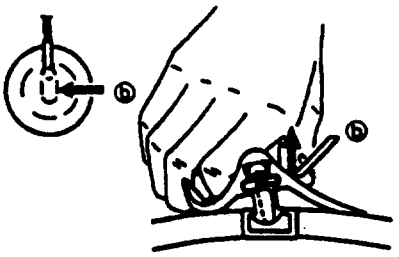


• REMOVAL OF ANODE-CAP

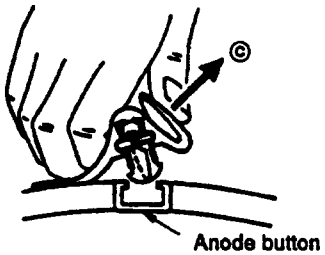
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

• REMOVING PROCEDURES

① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



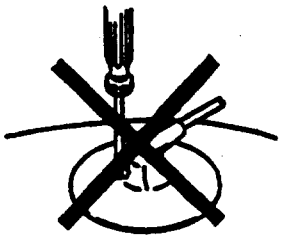
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

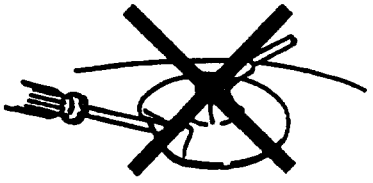
• HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

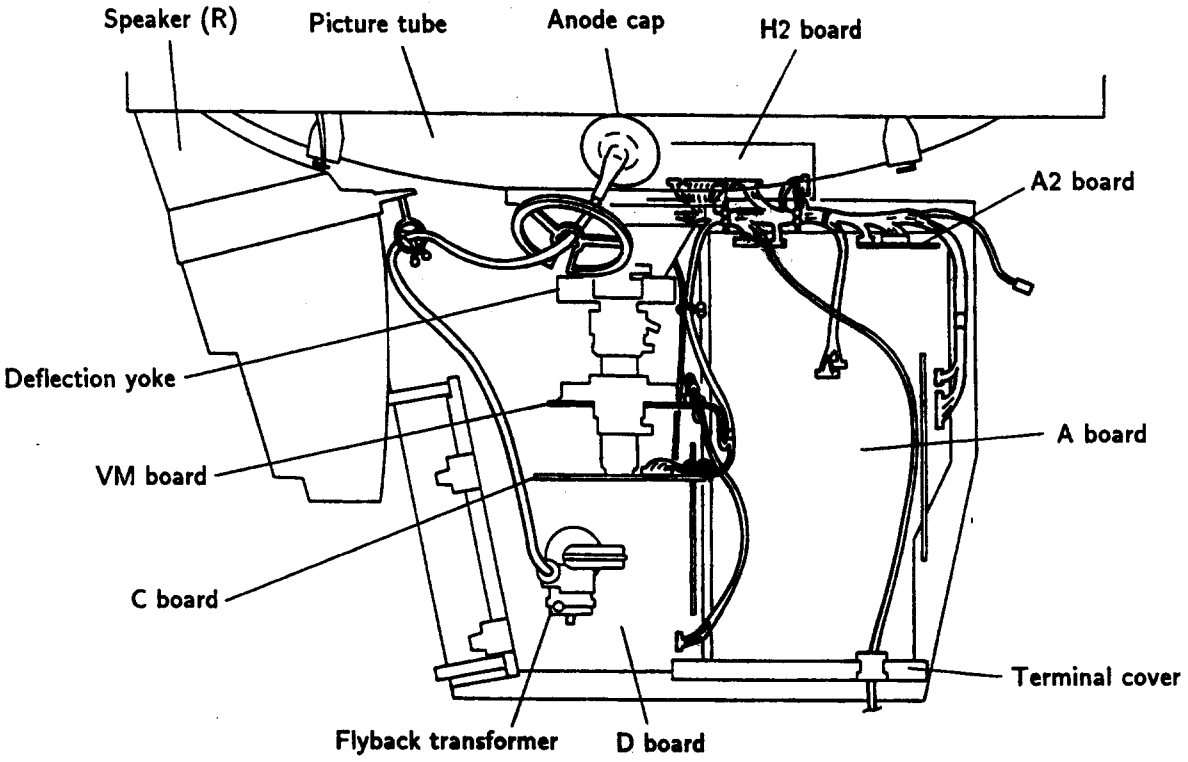
③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or hurt the rubber.



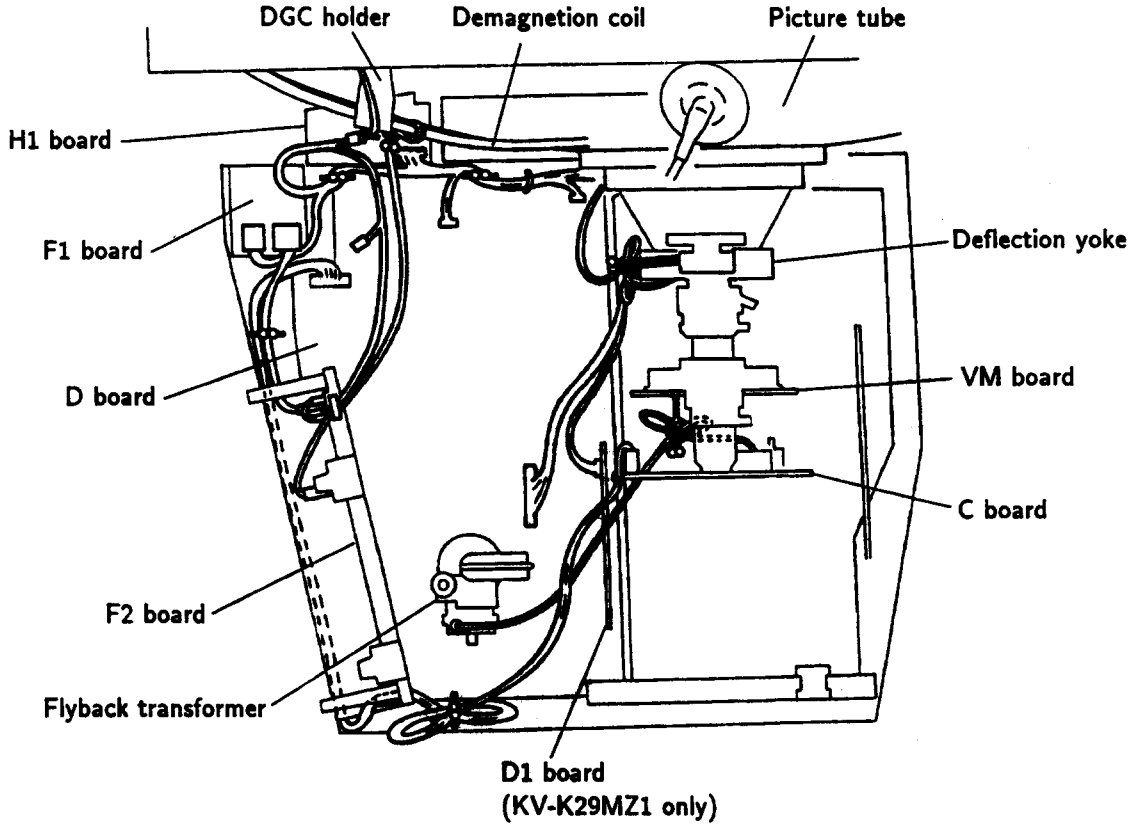


2-9. HARNESS LOCATION

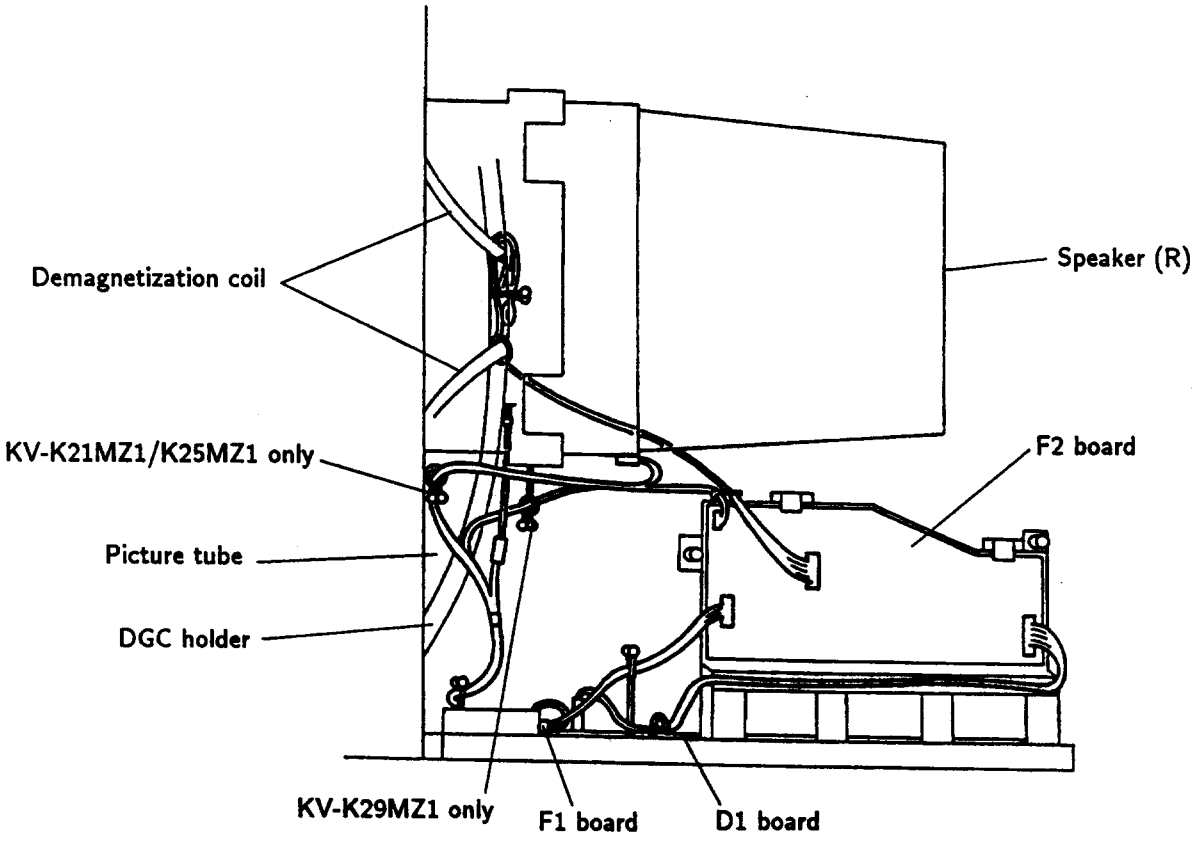
(1) TOP VIEW



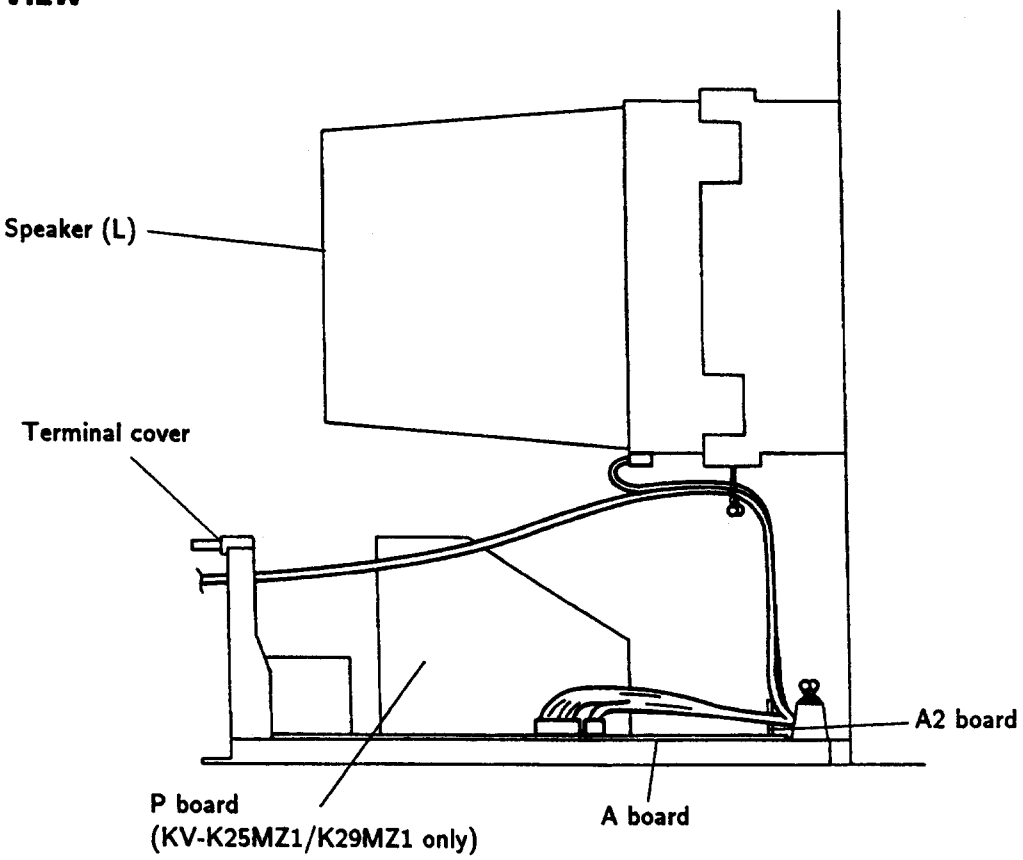
(2) TOP VIEW (LEFT)



(3) LEFT SIDE VIEW



(4) RIGHT SIDE VIEW



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted :

PICTURE control . . . . . RESET

BRIGHTNESS control . . . . . center

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note : Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   Contrast
   Bightness } normal
2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
   (See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
   (See Figure 3-4.)

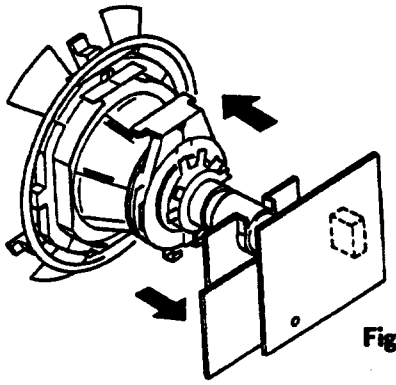


Fig.3-1

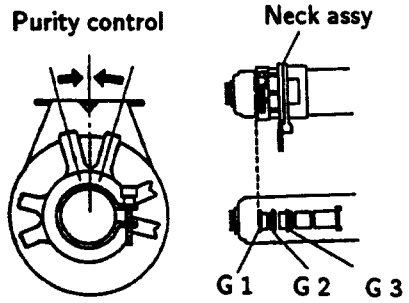


Fig.3-2

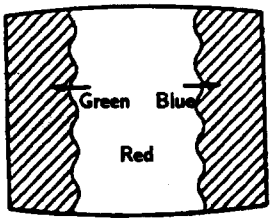


Fig.3-3

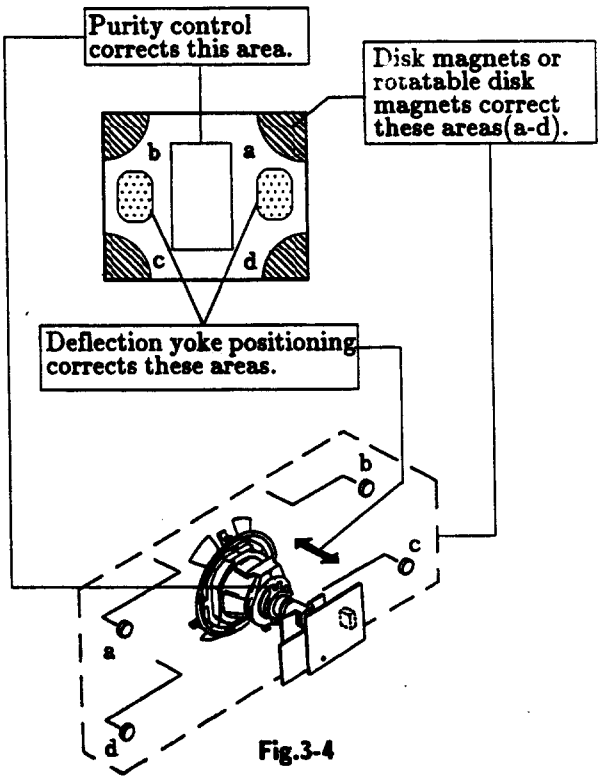


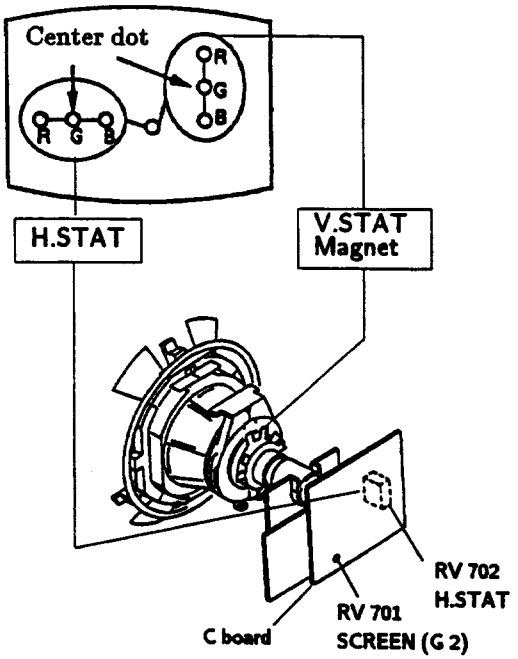
Fig.3-4

3-2. CONVERGENCE

Preparation :

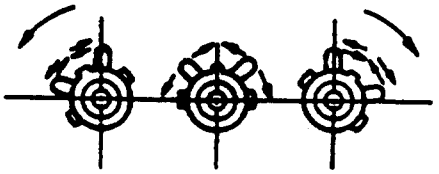
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

(1) **Horizontal and Vertical Static Convergence**

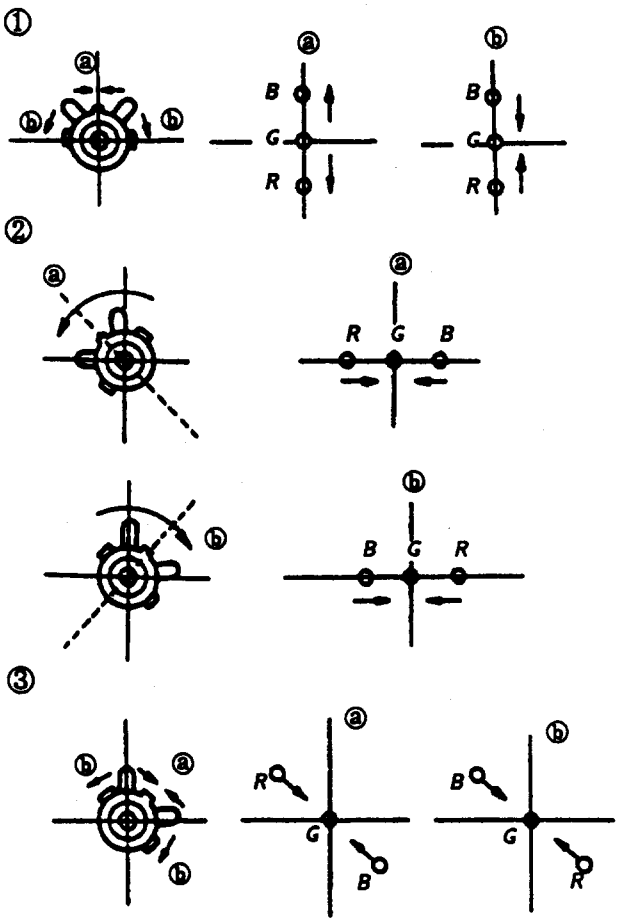


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

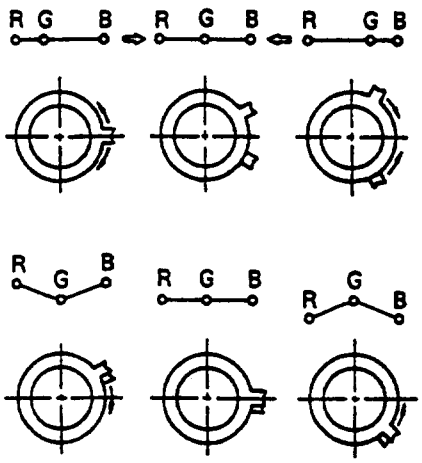
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



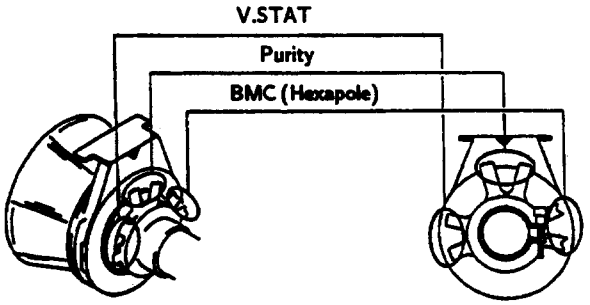
4. If the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



• Y separation axis correction magnet adjustment

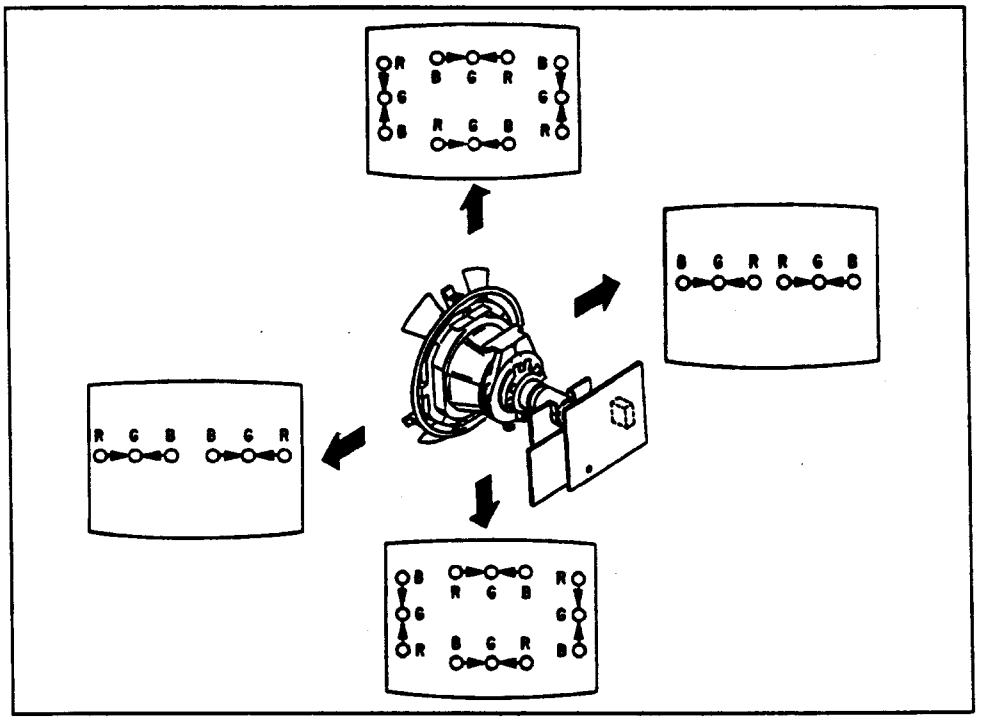
1. Receive the cross-hatch signal, and adjust [PIX] to "MIN" and [BRT] to "standard".
2. Adjust the deflection yoke to the upright condition when it hits the CRT.
3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
4. Return the deflection yoke to its original position.

(2) **Dynamic Convergence Adjustment**

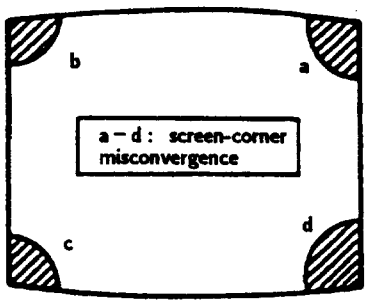
Preparations :

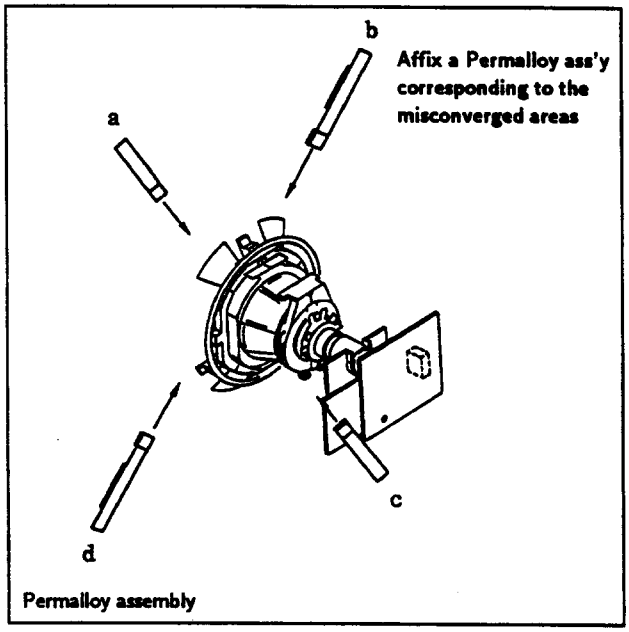
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Install the defelection yoke spacer.



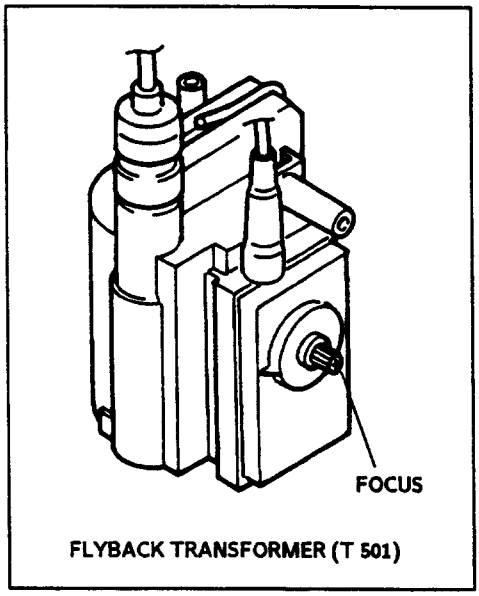
(3) Screen-corner Convergence





3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



a . AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Standard DATA				Note
		50 Hz		60 Hz		
		Normal	Wide	Normal	Wide	
07	GDR	1F	1F	1F	1F	G Drive
08	BDR	1F	1F	1F	1F	B Drive
09	GCT	07	07	07	07	G CUT-OFF
0A	BCT	07	07	07	07	B CUT-OFF
05	SBR	1F	1F	1F	1F	SUB-BRIGHTNESS

b . METHOD OF CANCELLATION FROM SERVICE MODE

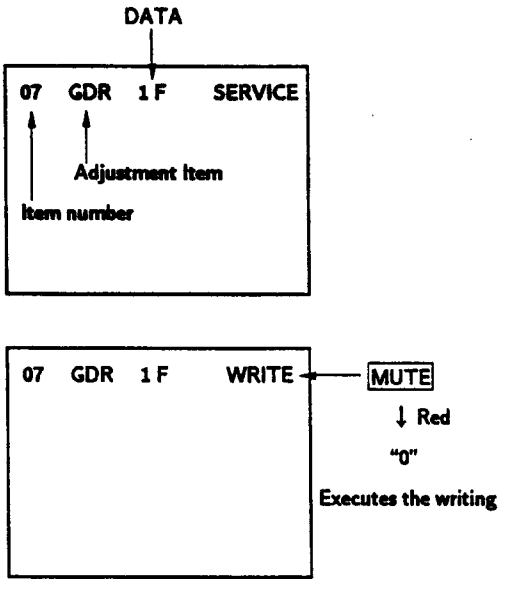
Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

c . METHOD OF WRITE FOR MEMORY

1) Set to Service Mode.
2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
3) Press MUTE button indicate WRITE (RED) on screen.
4) Press 0 button to write for memory.

d . MEMORY WRITE CONFIRMATION METHOD

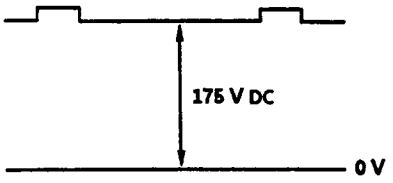
1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2) Turn the power switch ON and set to Service Mode.
3) Call the adjusted items again, confirm they were adjusted.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G 2 (SCREEN) ADJUSTMENT(RV 701)

1) Set the PICTURE and BRIGHTNESS to normal.
2) Put to VIDEO input mode without signals.
3) Set to Service Mode.
4) Change BLU data of the item number "57" from "01" to "00". (To turn off Blue Black.)
5) Press MUTE, and 0 to write the data in the memory.
6) Connect R, G, and B of the C board cathode to the oscilloscope.
7) Adjust G2 (RV701) volume to the value below.



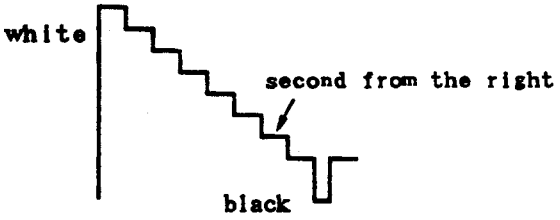
8) Re-set BLU data of the item number "57" from "00" back to "01".
9) Press MUTE, and 0 to write the data in the memory.

2. WHITE BALANCE ADJUSTMENTS

1) Set to service mode.
2) Input an entire white signal.
3) Set the PICTURE to minimum.
4) Select SBR with 1 and 4, and then set the level to minimum with 3 and 6.
5) Select GCT and BCT with 1 and 4.
   And adjust the level with 3 and 6 for the best white balance.
6) Set the PICTURE to maximum.
7) Select GDR and BDR with 1 and 4, and adjust the level with 3 and 6 for the best white balance.
8) Write into the memory by pressing MUTE → then 0.

3. SUB BRIGHT ADJUSTMENT

1) Set to service mode.
2) Input a staircase signal of black and white from the pattern generator.
3) BRIGHTNESS ··· RESET
   PICTURE ····· minimum
4) Select SBR with 1 and 4, and adjust SBR level with 3 and 6 so that the stripe second from the right is dimly lit.



SECTION 4
SELF DIAGONASIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.
In this case, one of the LED's responding to the problem device will flicker defined number of times.

Flickering is operated by lighting the LED's for 60ms and turning them off for 600ms.

The flickering frequency responding to each failed device is shown below.

Device	NONVOLATILE MEMORY	AV SWITCH (CXA1545S)	MAIN Y/C (TDA9145)	RGB JUNGLE (CXA1587)	DY DSP (CXD2018)	SURROUND PROCESSOR (TA8776N)
Flickering Frequency	1	2	3	4	5	6

All the devices are checked one after another from the left on the table.
If an error is found, the responding LED will start flickering.
So, if more than 2 devices are failed, the one on the left side will start flickering at first.

SECTION 5
CIRCUIT ADJUSTMENTS

5-1. ADJUSTMENTS WITH COMMANDER

Servise adjustments are made with the RM-845 that comes with this unit.

Entering service mode

With the unit on standby

↓

"DISPLAY"

↓

"5"

↓

"VOL (+)"

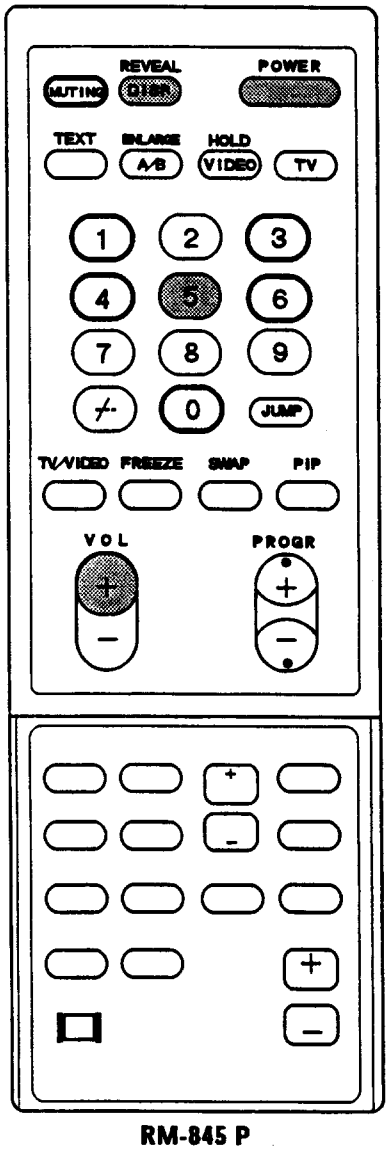
↓

"POWER"

This operation sequence puts the unit into servise mode.

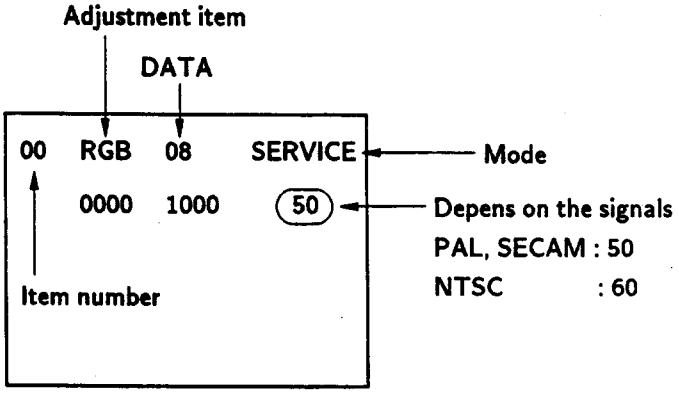
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"9"	H-FRE automatic adjustment
"5", "0"	Service data initialization (Besure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz, or in opposition.



RM-845 P

The screen display is :



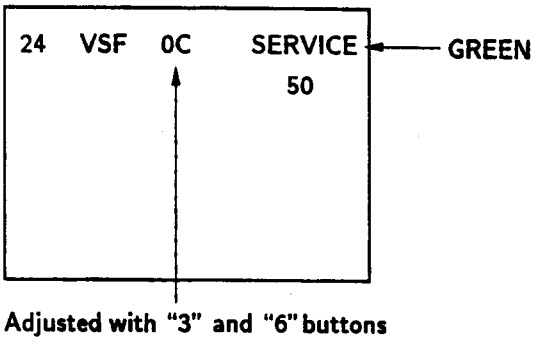
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes
↓	
"0"	Executes the writing.

5-2. ADJUSTMENT METHOD

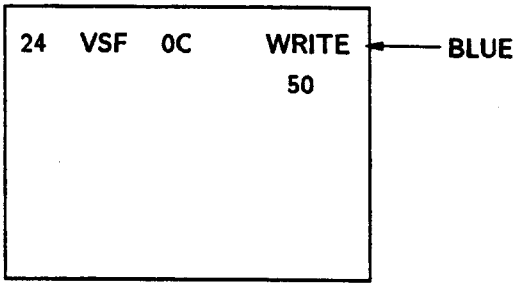
Item Number 24

This explanation uses V-SHFT as an example.

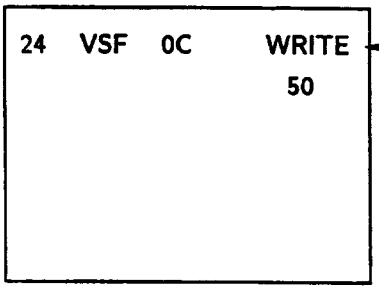
1. Select 24 V-SHFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard is for 0F PAL reception.)
4. Write with the MUTE button. (The display changes to blue WRITE.)
5. Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Adjusted with "3" and "6" buttons



Written with "MUTE"



The WRITE display changes briefly to red, then the display returns to a green SERVICE.

Write excuted with "0"

Use the same method for Items Number 00-5E. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

Note : In "WRITE", the data of all items are wrote together to memory.

- H-FRE can be adjusted automatically. Feed a standard signal and input "9", the automatic adjustment is executed.
- As for V-FREQ, by searching the bolded screen V range with adjusting data.

Note : In item 02 50Hz, or item 03 60Hz, it operates normally in spite of the 50Hz or the 60Hz of the input signal. Therefore be sure to adjust data according to the input signal.

Item number	Adjustment Item	Data range	Standard DATA				Note	(Device)
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
00	RGB	00~0F	07	07	07	07	RGB PICTURE	(CXA 1587 S)
01	SCN	00~0F	08	06	08	06	SUB-Contrast	(CXA 1587 S)
02	VM	00~03	02	02	02	02	VM Level	(CXA 1587 S)
03	SCL	00~0F	08	07	08	07	SUB-COLOR	(CXA 1587 S)
04	SHU	00~0F	08	08	08	08	SUB-HUE	(CXA 1587 S)
05	SBR	00~3F	1F	1F	1F	1F	SUB-BRIGHTNESS	(CXA 1587 S)
06	ABL	00~03	03	03	02	02	ABL Mode	(CXA 1587 S)
07	GDR	00~3F	1F	1F	1F	1F	G Drive	(CXA 1587 S)
08	BDR	00~3F	1F	1F	1F	1F	B Drive	(CXA 1587 S)
09	GCT	00~0F	07	07	07	07	G CUT-OFF	(CXA 1587 S)
0A	BCT	00~0F	07	07	07	07	B CUT-OFF	(CXA 1587 S)
0B	AKR	00~FF	7F	7F	7F	7F	AKB OFF R CUT-OFF	(CXA 1587 S)
0C	AKG	00~FF	7F	7F	7F	7F	AKB OFF G CUT-OFF	(CXA 1587 S)
0D	AKB	00~FF	7F	7F	7F	7F	AKB OFF B CUT-OFF	(CXA 1587 S)
0E	GMA	00~0F	0C	0C	0C	0C	γ control	(CXA 1587 S)
0F	DCT	00~03	00	00	00	00	DC TRAN	(CXA 1587 S)
10	DPI	00~03	03	03	03	03	D-PIC	(CXA 1587 S)
11	YFI	00~3F	22	22	22	22	Y Filter Adjust	(CXA 1587 S)
12	SHL	00~01	01	01	01	01	SHP-LIM	(CXA 1587 S)
13	YDL	00~0F	07	07	07	07	Y Delay Time	(CXA 1587 S)
14	YSW	00~03	01	01	01	01	Y-SW OUT	(CXA 1587 S)
15	HSH	00~3F	24	24	28	28	H Shift	(CXA 1587 S)
16	POV	00~0F	08	08	08	08	Pre-Over	(CXA 1587 S)
17	SHF	00~03	02	02	02	02	SHP-F 0	(CXA 1587 S)
18	SSH	00~03	01	01	02	02	SUB-Sharpness	(CXA 1587 S)
19	RMT	00~01	00	00	00	00	R-Mute	(CXA 1587 S)
1A	GMT	00~01	00	00	00	00	G-Mute	(CXA 1587 S)
1B	BMT	00~01	00	00	00	00	B-Mute	(CXA 1587 S)
1C	AG 1	00~01	00	00	00	00	Aging 1 (White)	(CXA 1587 S)
1D	AKF	00~01	00	00	00	00	AKB-OFF	(CXA 1587 S)
1E	SMD	00~01	00	00	00	00	Scan Mode	(CXA 1587 S)
1F	VEX	00~01	00	00	00	00	V-Extension	(CXA 1587 S)
20	AFC	00~03	03	03	03	03	AFC Loop Gain	(CXA 1587 S)
21	AFF	00~01	00	00	00	00	AFC-OFF	(CXA 1587 S)
22	RFP	00~01	00	00	00	00	Reference Position	(CXA 1587 S)
23	VSZ	00~3F	1E	1E	1A	1A	V-Size	(CXD 2018 Q)
24	VSF	00~3F	2E	2E	32	32	V-Shift	(CXD 2018 Q)
25	SCR	00~F	08	08	08	08	S-Correction	(CXD 2018 Q)
26	VLN	00~F	08	08	08	08	V-Linearity	(CXD 2018 Q)
27	HSZ	00~3F	0C	0C	0 E	0 E	H-Size	(CXD 2018 Q)
28	PAP	00~3F	2E	2E	2E	2E	Pin-Amp	(CXD 2018 Q)
29	TLT	00~0F	09	09	09	09	Tilt	(CXD 2018 Q)
2A	UCP	00~0F	0A	0A	0A	0A	Upper Corner Pin	(CXD 2018 Q)
2B	LCP	00~0F	0C	0C	0C	0C	Lower Corner Pin	(CXD 2018 Q)
2C	VBW	00~0F	08	08	08	08	V-Bow	(CXD 2018 Q)
2D	VAG	00~0F	08	08	08	08	V-Angle	(CXD 2018 Q)
2E	HVV	00~07	04	04	04	04	HV-Comp-V	(CXD 2018 Q)
2F	HVH	00~07	00	00	00	00	HV-Comp-H	(CXD 2018 Q)
30	FCL	00~07	03	03	03	03	Frame Color	(SDA 9188)
31	FON	00~01	01	01	01	01	Frame ON	(SDA 9188)
32	DLY	00~07	00	00	00	00	Select Delay LL 3 P	(SDA 9188)
33	P-V	00~0F	07	07	07	07	V read delay	(SDA 9188)
34	PVS	00~07	04	04	04	04	PIP-V offset	(SDA 9188)
35	P-H	00~3F	0A	0A	07	07	H read delay	(SDA 9188)
36	PHS	00~0F	07	07	03	03	PIP-H offset	(SDA 9188)
37	CTR	00~0 F	0A	0A	0A	0A	Contrast	(SDA 9188)
38	FWV	00~01	01	01	01	01	Frame Width V	(SDA 9188)
39	FWH	00~01	01	01	01	01	Frame Width H	(SDA 9188)
3A	DVI	00~0F	07	07	07	07	Setting Delay VSI	(SDA 9188)
3B	DVP	00~0 F	0F	0F	0F	0F	Delay VSP Pulse	(SDA 9188)
3C	BRT	00~0 F	0C	0C	0C	0C	Frame BRIGHT Data	(SDA 9188)

Item number	Adjustment Item	Data range	Standard DATA				Note	(Device)
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
3D	LEV	00~0 F	00	00	00	00	Level Adjust	(TDA 9840)
3E	STR	00~3 F	02	02	02	02	Stereo Adjust	(TDA 9840)
3F	AXG	00~01	00	00	00	00	AUX Output Gain	(TDA 8204)
40	AXM	00~01	00	00	00	00	AUX Output Mute	(TDA 8204)
41	VCX	00~01	00	00	00	00	VCXO free run	(TDA 8204)
42	ERC	00~01	00	00	00	00	Error count Time	(TDA 8204)
43	MXE	00~01	00	00	00	00	MAX. allowed Error	(TDA 8204)
44	SRO	00~01	00	00	00	00	SRO set Bit	(TDA 8204)
45	ATO	00~00	01	01	01	01	Auto Selection	(TDA 8204)
46	SYS	00~01	00	00	00	00	System select	(TDA 8204)
47	FSW	00~03	00	00	00	00	Force Switch	(TDA 8204)
48	SYN	00~01	01	01	01	01	Synthesizer	(TDA 8204)
49	VCR	00~01	00	00	00	00	VCC Reference Sw	(CXP 1315 P)
4A	SEL	00~FF	5F	5F	5 F	5F	Separation Level	(CXP 1315 P)
4B	DCS	00~3F						
4C	UYB	00~3F						
4D	LYB	00~3F						
4E	HAP	00~3F						
4F	HTL	00~3F						
50	UCB	00~3F						
51	UTL	00~3F						
52	LCB	00~3F						
53	LTL	00~3F						
54	TXP	00~0 F	00	00	00	00	Teletext Picture	(Teletext μ-Con)
55	ODL	00~FF	10	10	10	10	Power ON Delay	(CXP 80424)
56	OSH	00~3 F	0F	0F	0F	0F	OSD Position H	(CXP 80424)
57	BLU	00~01	01	01	01	01	Blue Back Feature	(CXP 80424)
58	ROC	00~0F	07	07	07	07	Center of Rotation	(CXP 80424)
59	ROS	00~07	03	03	03	03	Step Width	(CXP 80424)
5A	HTR	00~3 F	1 F	1 F	1 F	1 F	H Trapezoid	(CXP 80424)
5B	MUT	00~01	01	01	01	01	No Sync. Mute	(CXP 80424)
5C	DID	00~01	00	00	00	00	Disable Degauss	(CXP 80424)
5D	OP0	00~FF	*1	*1	*1	*1	Option 0	(CXP 80424)
5E	OP1	00~0F	*2	*2	*2	*2	Option 1	(CXP 80424)

*1 Input data are different according to models.

Item	CCD	Text	PinP	Jpn	NICM	W. G	MTS	Comb
KV-K21MZ 1	0	0	1	0	0	1	0	1
KV-K25MZ 1	0	0	1	0	0	1	0	1
KV-K29MZ 1	0	0	1	0	0	1	0	1

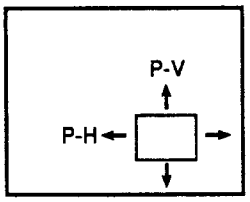
*2 Input data are different according to models.

Item	—	—	—	—	Mono	Tilt	Dcon	Chin
KV-K21MZ 1	0	0	0	0	0	0	0	1
KV-K25MZ 1	0	0	0	0	0	0	0	1
KV-K29MZ 1	0	0	0	0	0	0	0	1

5-3. DISPLAY POSITION ADJUSTMENT

Item Numbers 35-36

33 P-V Pin-P vertical position correction
34 PVS Pin-P vertical offset
35 P-H Pin-P horizontal position correction
36 PHS horizontal offset



- When pressing PIP "POSITION" key in the service mode, "POSITION" turns round and round automatically.

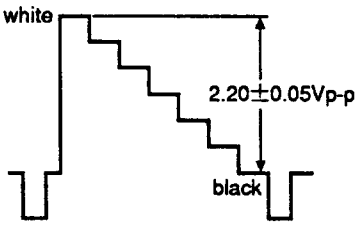
Item Numbers 33-36 are set to the standerd values.

54 TXP Teletext picture
Corrects the brightness for when teletext is received.
Standard value is 05.

5-4. A BOARD ADJUSTMENT

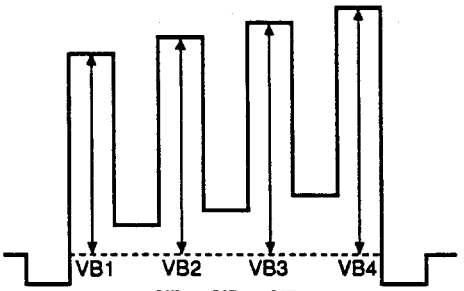
SUB CONTRAST ADJUSTMENT (SCN)

1. Receive a PAL color-bar.
2. Put DC 3.0V to the pin ㉖ (ABL IN) of IC 304, A Board. Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
3. Connect an oscilloscope to the pin ⑥ (R OUT) of CN118, A Board.
4. Set to Service Mode and select 01 (SIN) with [1] and [4] of the commander to adjust to 2.2±0.05V.
5. Press [MUTING] → 0 of the commander to write the data.
6. Receive a NTSC color-bar and adjust as step 4 and 5.
7. Receive the PAL color-bar to set to WIDE Mode by pressing [MENU]. Then set to Service Mode and adjust 01 (SCN) to write the 2 step dropped value of the step 4.
8. Receive the NTSC color-bar and adjust as step 7.



SUB COLOR ADJUSTMENT (SCL)

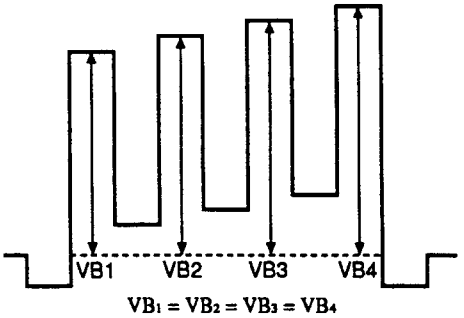
1. Receive a PAL color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN118, A Board.
3. Set to Service Mode and select 03 (SCL) with 1 and 4 of the commander to adjust to VB2=VB3=VB4 with [3] and [6].
5. Press [MUTING] → [0] of commander to write the data.



6. Adjust as step 4 and 5 by receiving NTSC color-bar.
7. Receive the PAL color-bar to set to WIDE Mode by pressing [MENU]. Then set to Service Mode and adjust 03 (SCL) to write 1 step dropped value of the step 4.
8. Receive the NTSC color-bar and adjust as step 7.

SUB HUE ADJUSTMENT (SHU)

1. Receive a NTSC color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN118, A Board.
3. Select 04(SHU) with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2 =VB3=VB4 with [3] and [6].



4. Press [MUTING] → [0] of the comander to write the data.
5. set to WIDE Mode by [MENU] button to write the same value as the step 3.

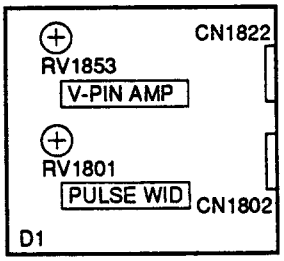
PIP H.V. POSITION (P-H, P-V)

1. Receive a PAL color-bar.
2. Set the pip picture by pressing [PIP] button of the commander.
3. Set to Service Mode.
4. Select 33 (P-V) with the [1] and [4] of the commander to set the data "07" with [3] and [6].
5. Select 35 (P-H) to set the data "0A".
6. receive a NTSC color-bar.
7. Select 33 (R-V) to set the data "07" with 3 and 6. Select 36 (R-H) to set the data "07" with 3 and 6.
8. Check by pressing [POSITION] of the commander.
9. Press [MUTING] → [0] of commander to write the data.

Y. FILTER ADJUSTMENT (YF1)

1. Set to Service Mode.
2. Select 14 (Y.SW) with [1] and [4] of the commander to set the data "3" with [3] and [6].
3. Put SINE wave of 4.43MHz to the pin ② (YIN) of IC 304.
4. Connect an oscilloscope to the pin ① of CN105, A Board.
5. Adjust so that the waveform is minimum by selecting 11 (YF1) with [3] and [6].
6. Press [MUTING] → [0] of commander to write the data.

5-5. D1 BOARD ADJUSTMENT (KV-K29MZ1)



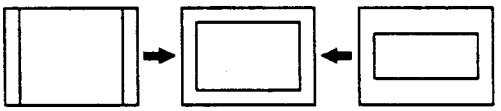
V-PIN AMP, PULSE WIDTH ADJUSTMENT (RV1853, RV1801)

1. Receive a color-bar.
2. Connect AC voltmeter between the pin ① of CN1802 and GND.
3. Turn RV1853 clockwise to the end and RV1801 counterclockwise to the end.
4. Turn RV1801 clockwise a little to adjust the value on the AC voltmeter to AC25±0.5Vp-p.

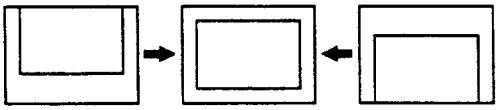
5-6. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

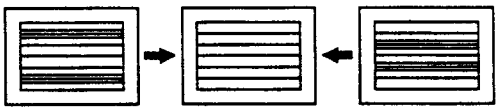
23 VSZ (V SIZE)



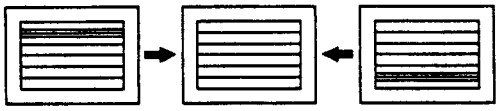
24 VSF (V SHIFT)



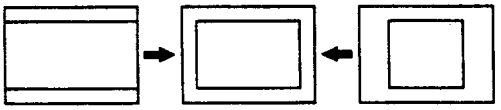
25 SCR (VERTICAL S correction)



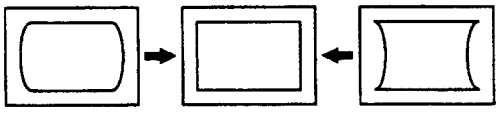
26 VLN (V LINEARITY)



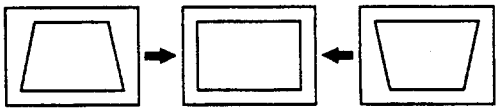
27 HSZ (H SIZE)



28 PAP (PIN AMP)

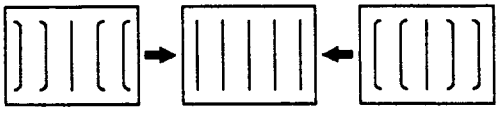


29 TLT (TILT)

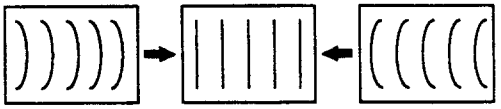


2A UCP (PIN AMP)

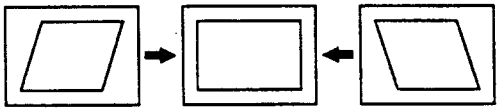
2B LCP (Lower Corner Pin)



2C VBOW (V-BOW)



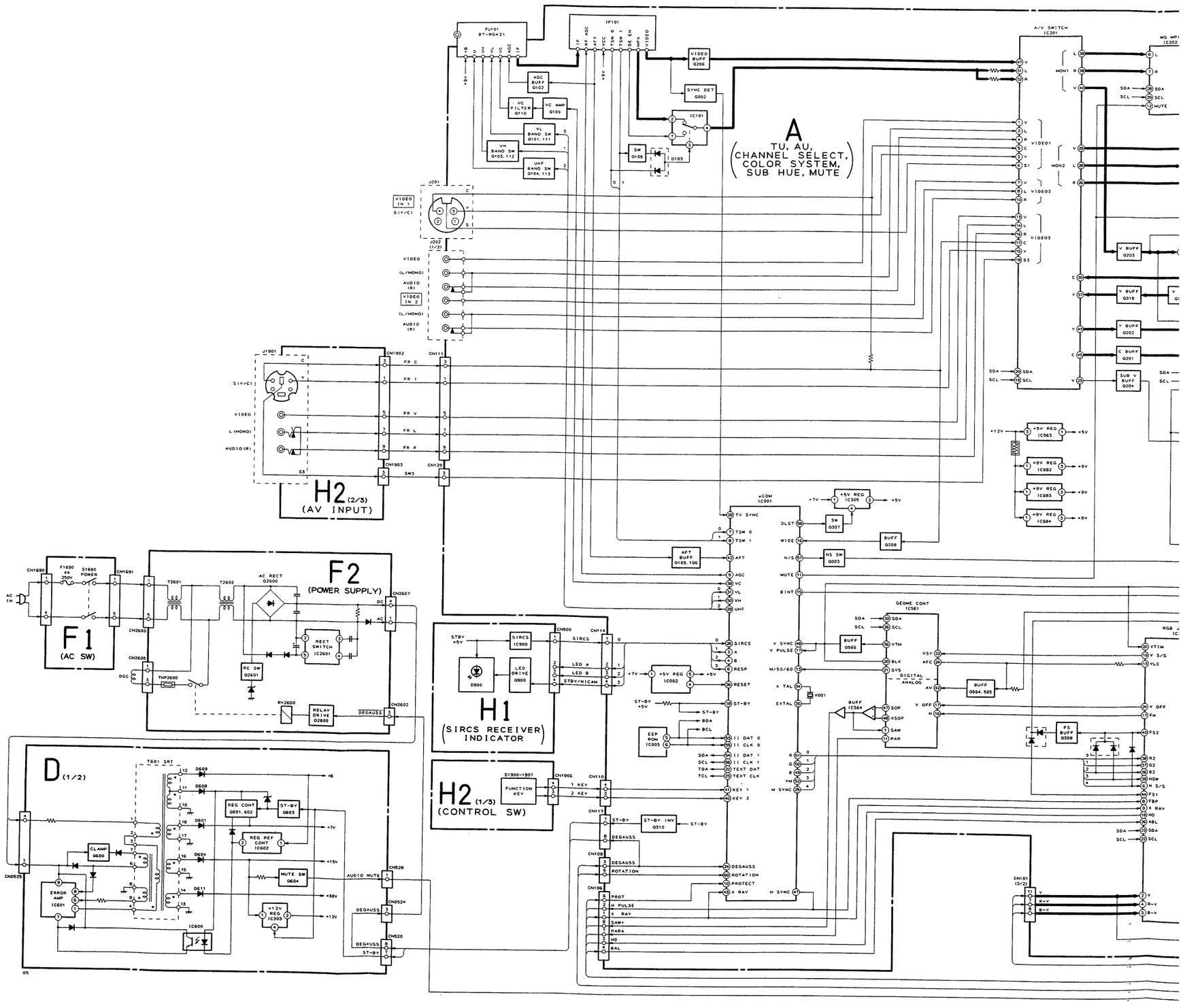
2D VAG (V-ANGLE)



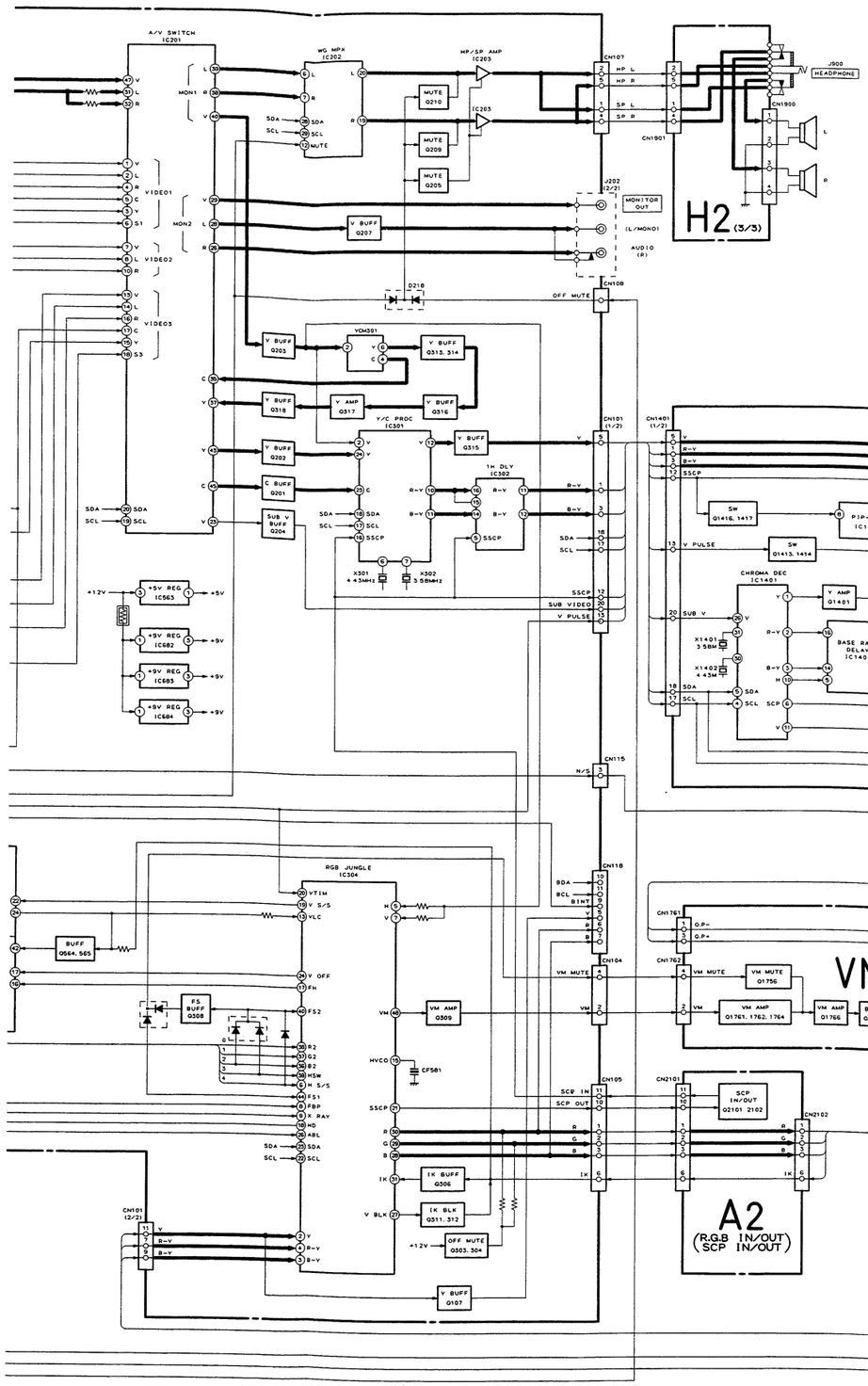
SECTION 6
DIAGRAMS

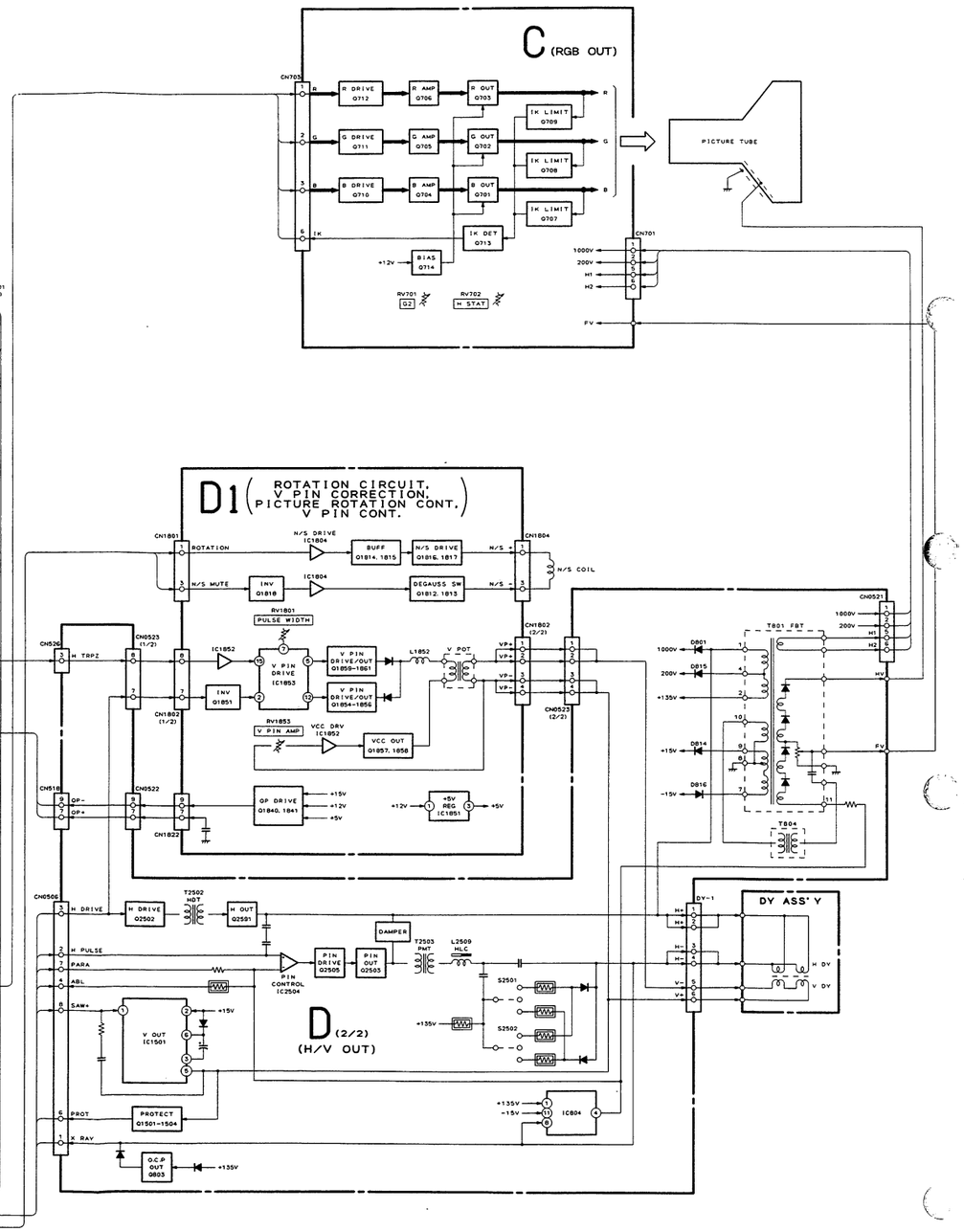
6-1. BLOCK DIAGRAM

KV-K29CF1
RM-845P

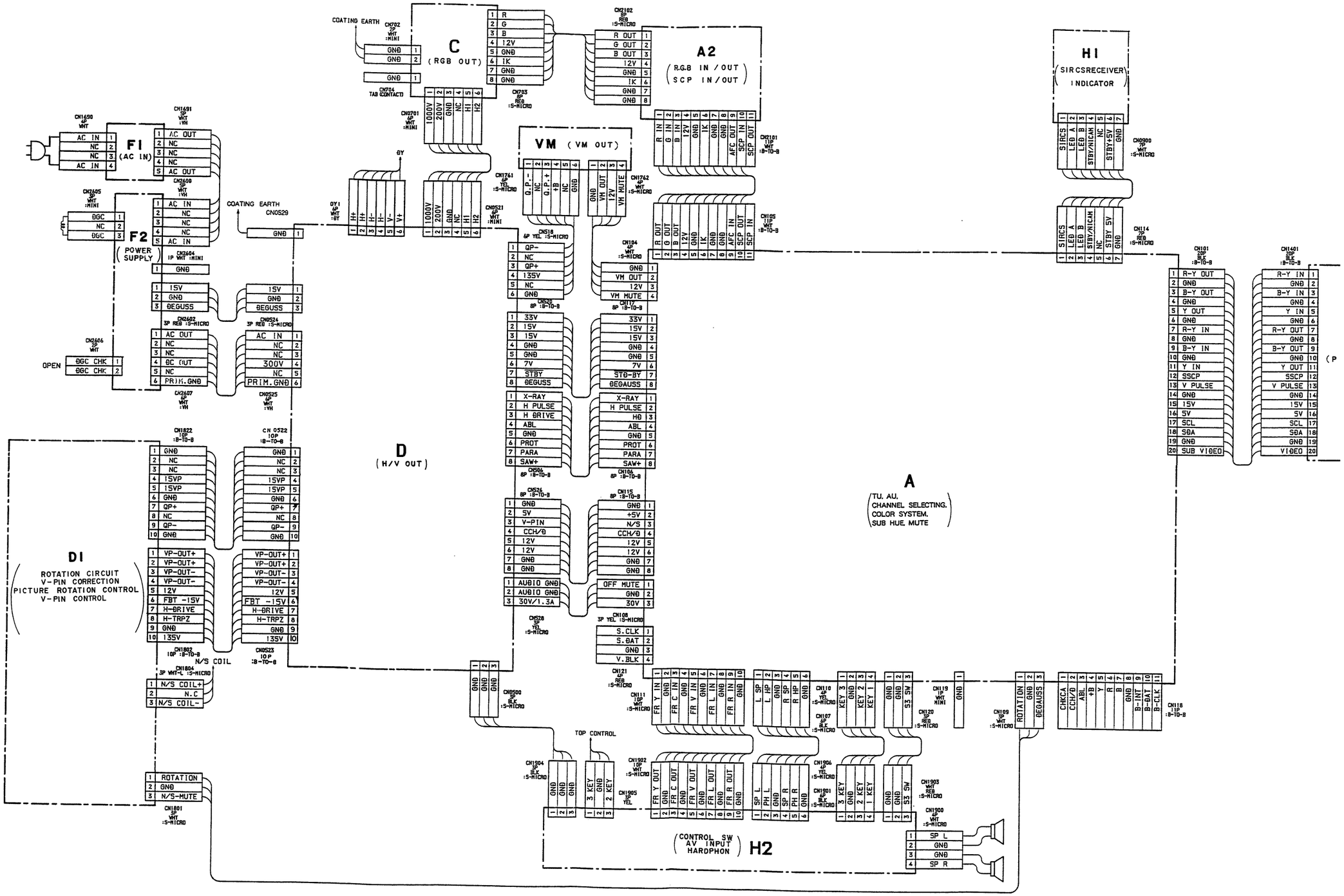


KV-K29CF1
RM-845P



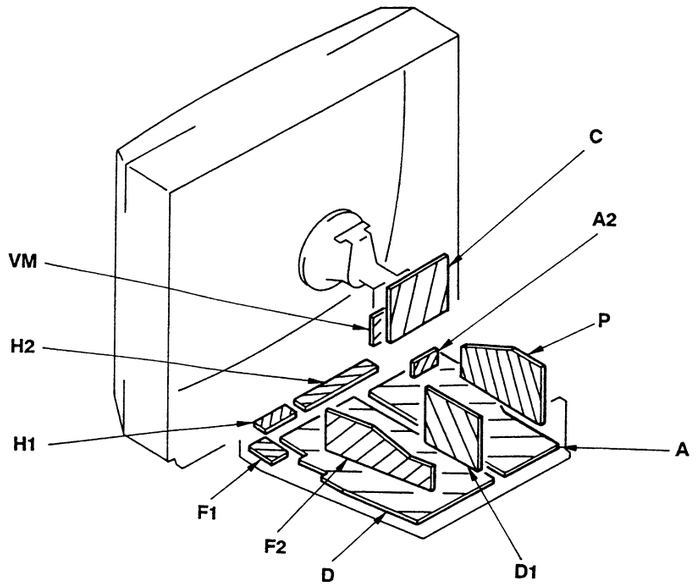


6-2. FRAME SCHEMATIC DIAGRAM


C (RGB OUT)
A2 (R.G.B IN / OUT SCP IN / OUT)
HI (SIRCS RECEIVER INDICATOR)
VM (VM OUT)
F1 (AC IN)
F2 (POWER SUPPLY)
D (H/V OUT)
A (TU. AU. CHANNEL SELECTING. COLOR SYSTEM. SUB HUE. MUTE)
D1 (ROTATION CIRCUIT V-PIN CORRECTION PICTURE ROTATION CONTROL V-PIN CONTROL)
H2 (CONTROL SW AV INPUT HARDPHON)
COATING EARTH
N/S COIL
TOP CONTROL
OPEN

KV-K29CF1
RM-845P

CIRCUIT BOARDS LOCATION



6-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ =1000Ω, MΩ =1000KΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power ¼ W (CHIP: 1/10W)

- : nonflammable resistor.
- △ : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.
  no mark : PAL
  〈 〉: SECAM
  ( ): NTSC 3.58
  { }: NTSC 4.43
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- ＊ : Can not be measured.
- Circled numbers are waveform reference.
- ▬▬ : B + bus.
- ▬ ▬ ▬ : B − bus.
- ▒▒▒ : signal path.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

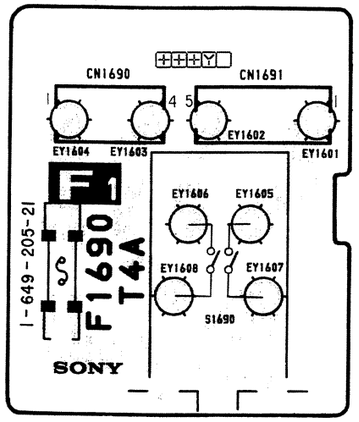
KV-K29CF1 RM-845P

PRINTED WIRING BOARDS

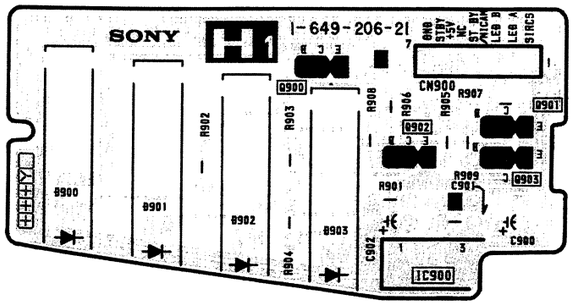
F1 [AC IN] H1 [SIRCS RECEIVER, INDICATOR]

F2 [POWER SUPPLY] H2 [CONTROL SW, AV INPUT, HEADPHONE]

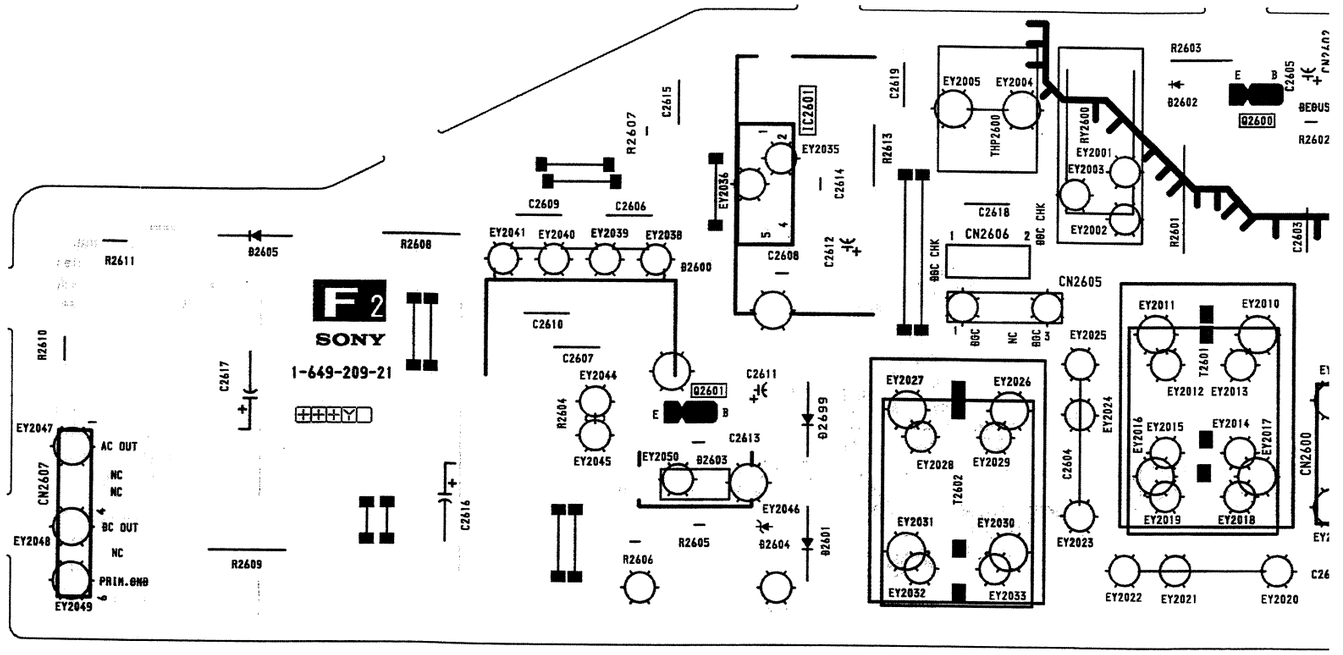
– F1 Board –



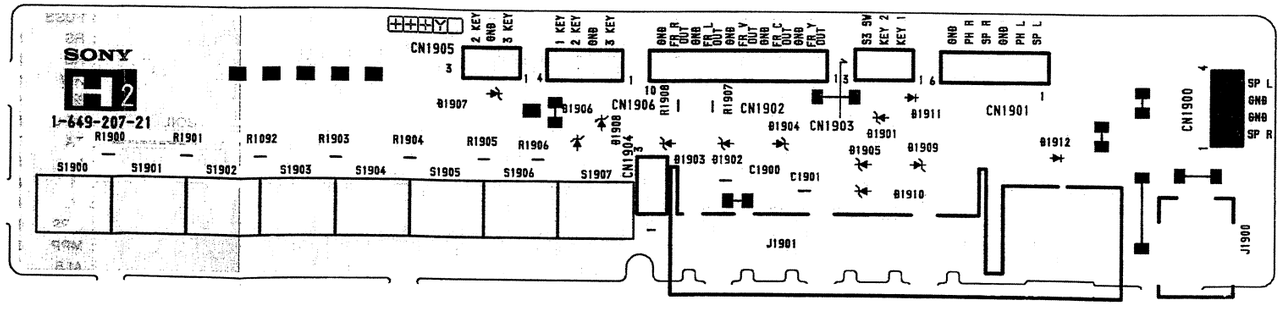
– H1 Board –

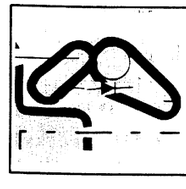


– F2 Board –



– H2 Board –



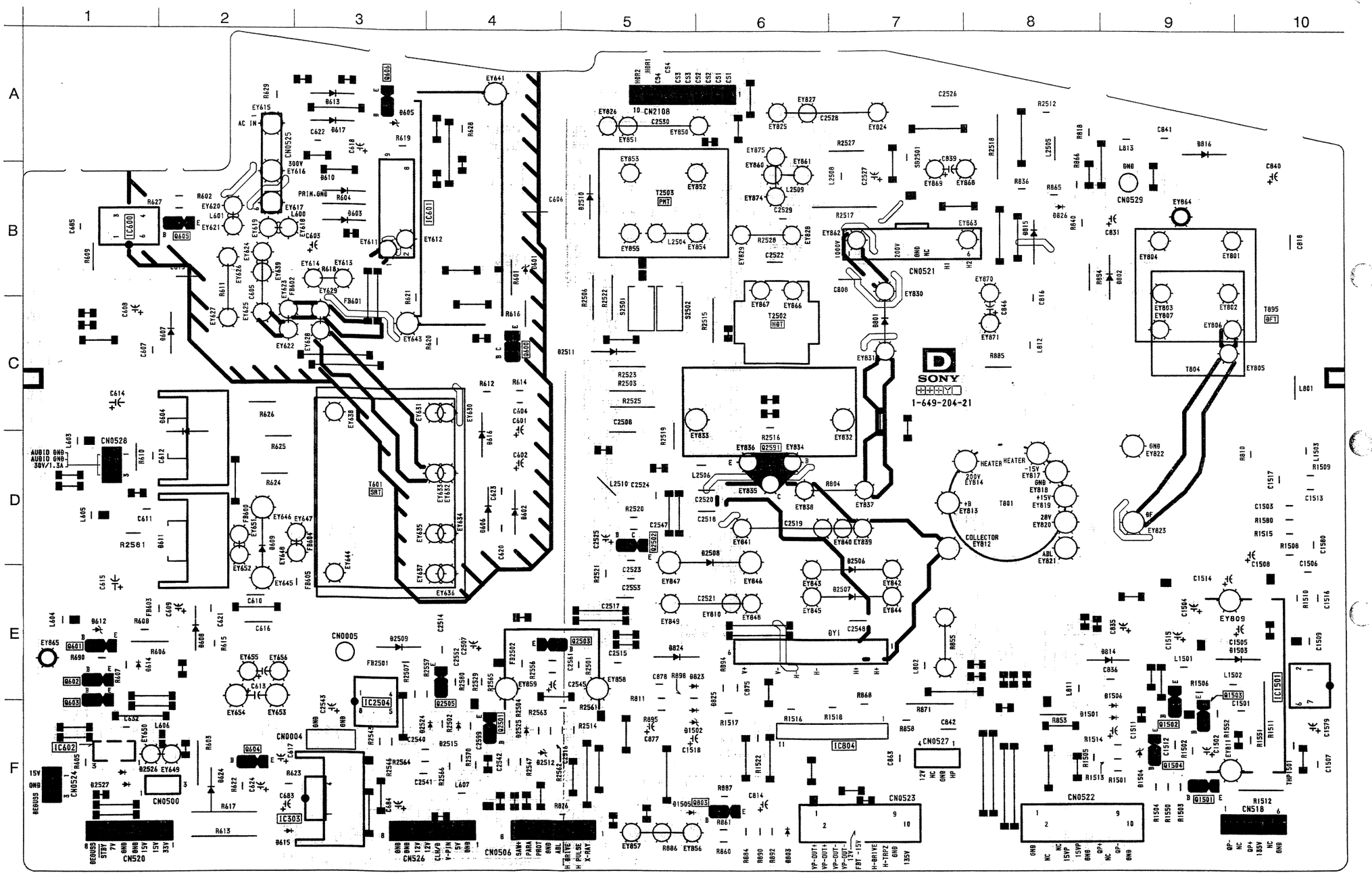


NOTE:
The cir
600 Vp
inspecti

KV-K29CF1
RM-845P

D [H/V OUT]

– D Board –

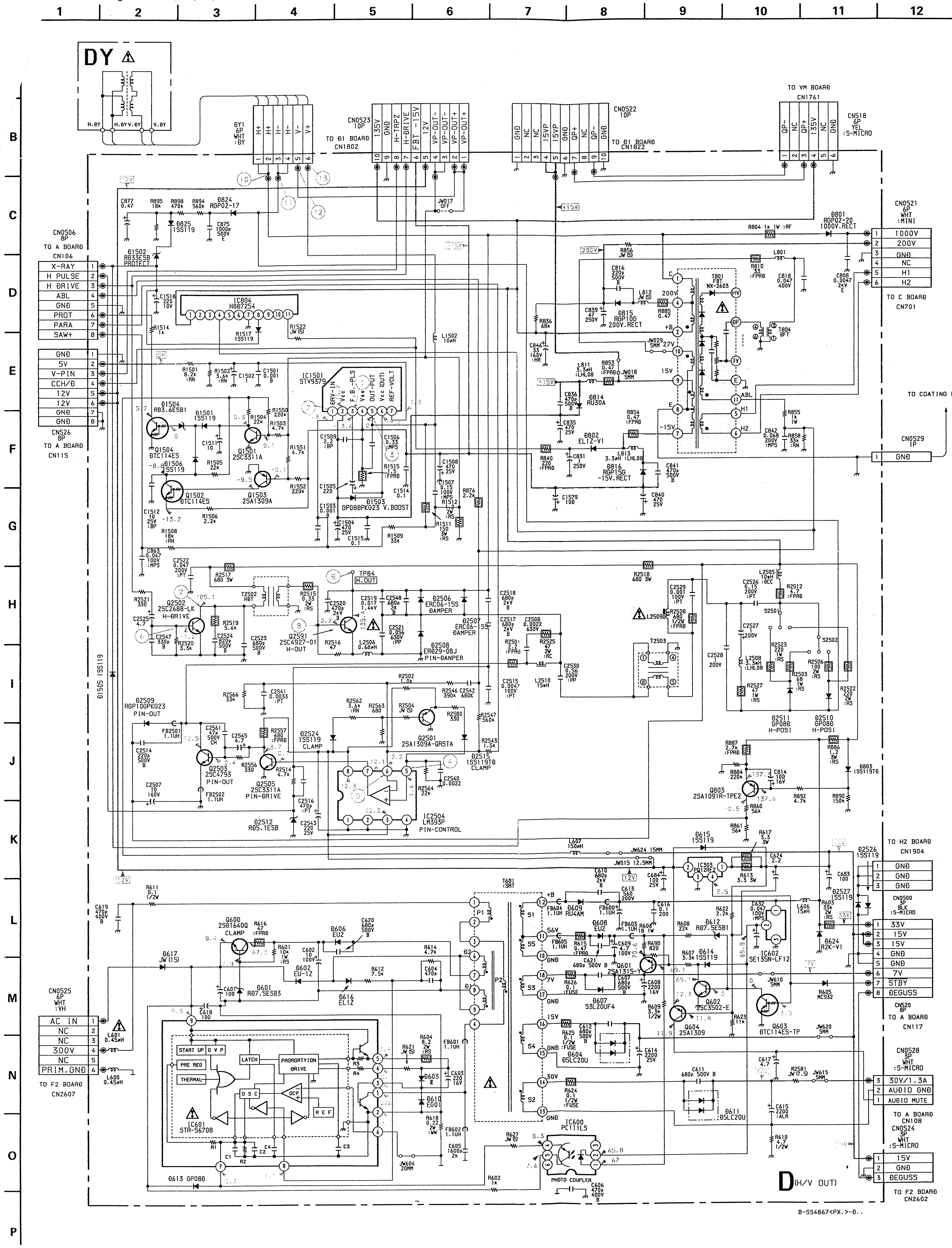


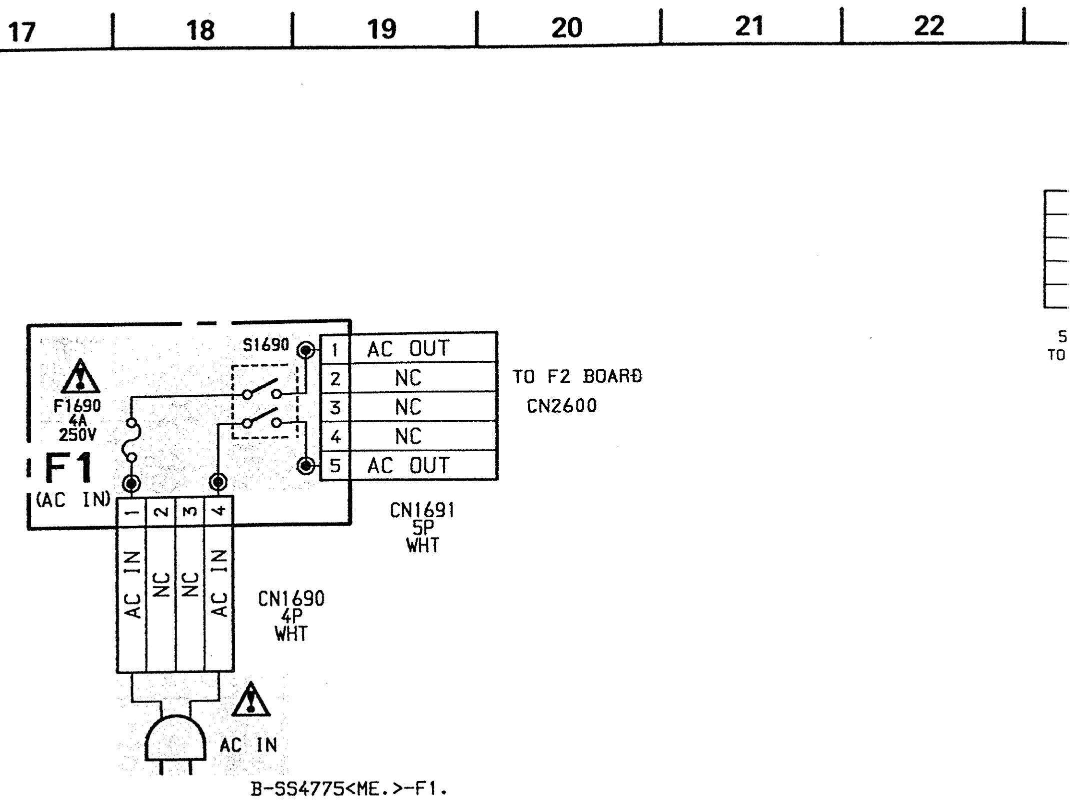
• D BOARD

IC		DIODE	
IC303	F – 3	D601	B – 4
IC600	B – 1	D602	D – 4
IC601	B – 3	D604	C – 2
IC602	F – 1	D606	D – 4
IC804	F – 7	D607	C – 2
IC1501	E – 10	D608	E – 2
IC2504	E – 3	D609	D – 2
		D610	B – 3
		D611	D – 2
		D612	E – 1
		D613	A – 3
		D614	E – 1
		D615	F – 2
		D616	D – 4
		D617	A – 3
		D624	F – 2
TRANSISTOR		D801	C – 7
		D802	B – 9
		D803	F – 6
Q600	C – 4	D814	E – 9
Q601	E – 1	D815	B – 8
Q602	E – 1	D816	A – 9
Q603	E – 1	D824	E – 5
Q604	F – 3	D825	E – 5
Q803	F – 6	D1501	E – 9
Q1501	F – 9	D1502	F – 5
Q1502	E – 9	D1503	E – 10
Q1503	E – 9	D1504	F – 9
Q1504	F – 9	D1505	F – 5
Q2501	F – 4	D1506	E – 9
Q2502	D – 5	D2506	D – 7
Q2503	E – 4	D2507	E – 7
Q2505	E – 4	D2508	D – 6
Q2591	D – 6	D2509	E – 3
		D2510	B – 5
		D2511	C – 5
		D2512	F – 4
		D2515	F – 4
		D2524	F – 3
		D2526	F – 1
		D2527	F – 1

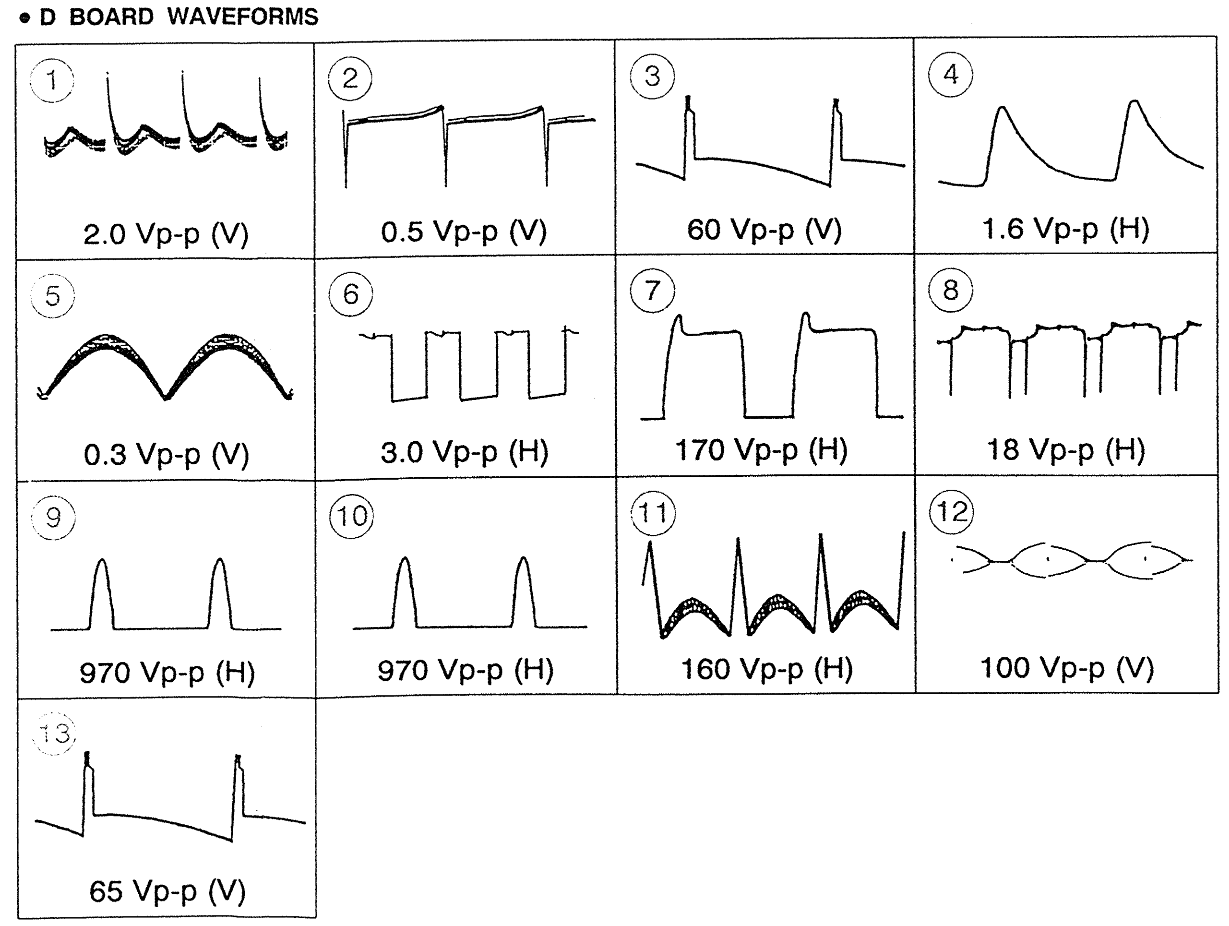
:ed as left contains high voltage of over
ıst be paid to prevent an electric shock in
ring.

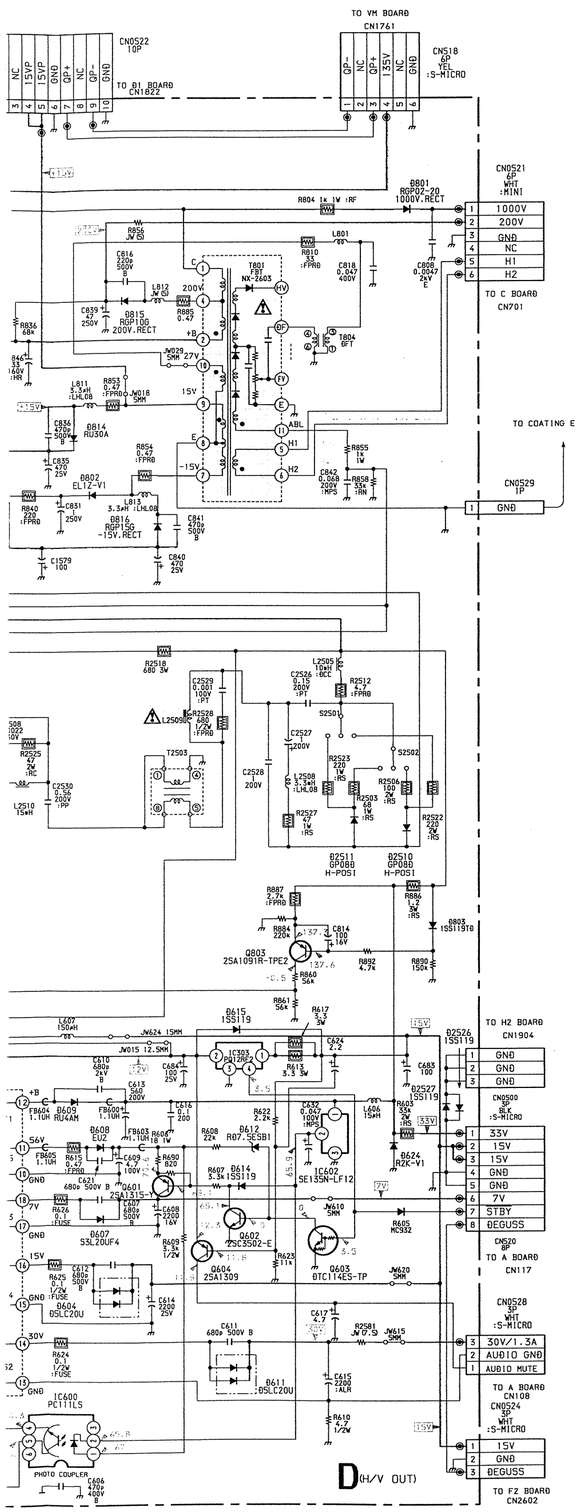
chematic Diagrams of D, F1, F2, H1 and H2 Boards

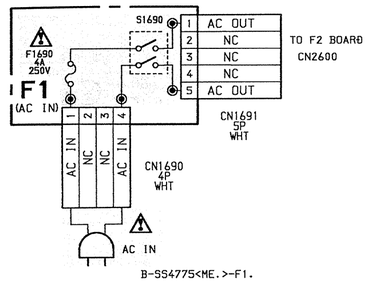

1 2 3 4 5 6 7 8 9 10 11 12 13 14
B C D E F G H I J K L M N O P
DY
H.DY H.DY V.DY V.DY
DY1 6P WHT :DY
H+ H+ H- H- V- V+
CN0523 10P
TO D1 BOARD CN1802
135V GND H-TRPZ H-DRIVE FBT -15V 12V VP-OUT- VP-OUT- VP-OUT+ VP-OUT+
CN0522 10P
GND NC NC 15VP 15VP GND QP+ NC QP- GND
TO D1 BOARD CN1822
TO VM BOARD CN1761
QP- NC QP+ 135V NC GND
CN518 6P YEL :S-MICRO
CN0506 8P TO A BOARD CN106
X-RAY H PULSE H DRIVE ABL GND PROT PARA SAW+
GND 5V V-PIN CCH/D 12V 12V GND GND
CN526 8P TO A BOARD CN115
IC804 HD07254
IC1501 STV9379
DRV-IN Vcc F.B.-PLS Vee OUT-PUT Vcc (OUT) REF-VOLT
D1503 GP08DPKG23 V.BOOST
T801 FBT NX-2603
T804 DFT
CN0521 6P WHT :MINI
1000V 200V GND NC H1 H2
TO C BOARD CN701
TO COATING E
CN0529 1P
GND
D801 RGP02-20 1000V.RECT
D815 RGP10G 200V.RECT
D816 RGP15G -15V.RECT
D802 EL1Z-V1
D814 RU30A
TP84 H.OUT
Q2502 2SC2688-LK H-DRIVE
T2502 HDT
Q2591 2SC4927-01 H-OUT
D2506 ERC06-15S DAMPER
D2507 ERC06-15S DAMPER
D2508 ERD29-08J PIN-DANPER
T2503
D2511 GP08D H-POSI
D2510 GP08D H-POSI
D2509 RGP10GPKG23 PIN-OUT
Q2503 2SC4793 PIN-OUT
Q2505 2SC3311A PIN-DRIVE
Q2501 2SA1309A-QRSTA
D2524 1SS119 CLAMP
D2515 1SS119TD CLAMP
IC2504 LM393P PIN-CONTROL
D2512 RD5.1ESB
Q803 2SA1091R-TPE2
TO H2 BOARD CN1904
GND GND GND
CN0500 3P BLK :S-MICRO
33V 15V 15V GND GND 7V STBY DEGUSS
CN520 8P TO A BOARD CN117
CN0528 3P WHT :S-MICRO
30V/1.3A AUDIO GND AUDIO MUTE
TO A BOARD CN108
CN0524 3P WHT :S-MICRO
15V GND DEGUSS
TO F2 BOARD CN2602
CN0525 6P WHT :VH
AC IN NC NC 300V NC PRIM.GND
TO F2 BOARD CN2607
Q600 2SD1640Q CLAMP
IC601 STR-S6708
START UP O V P LATCH PRORORTYION DRIVE PRE REG THERMAL O S C OCP R E F
T601 :SRT
IC303 PQ12RF2
IC602 SE135N-LF12
Q601 2SA1315-Y
Q602 2SC3502-E
Q604 2SA1309
Q603 DTC114ES-TP
IC600 PC111LS
PHOTO COUPLER
D(H/V OUT)
B-SS4867<PX.>-D..

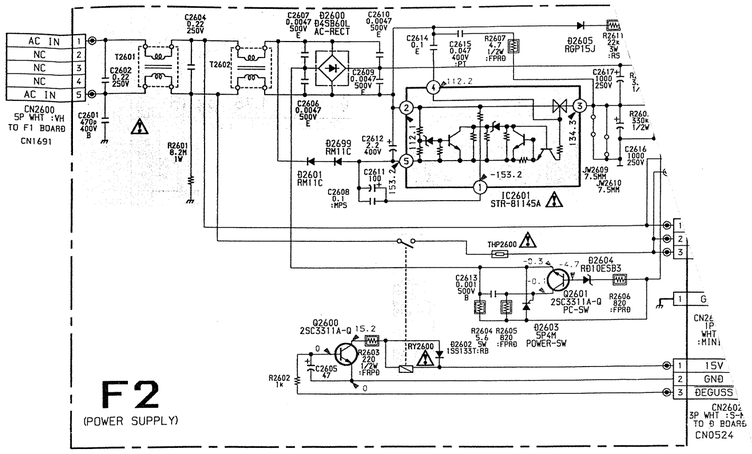


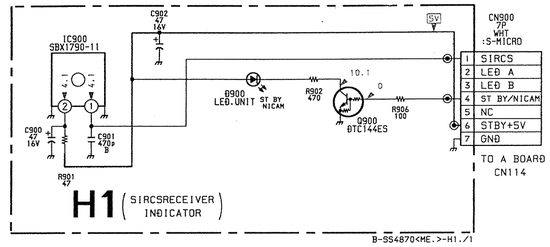
• D BOARD WAVEFORMS

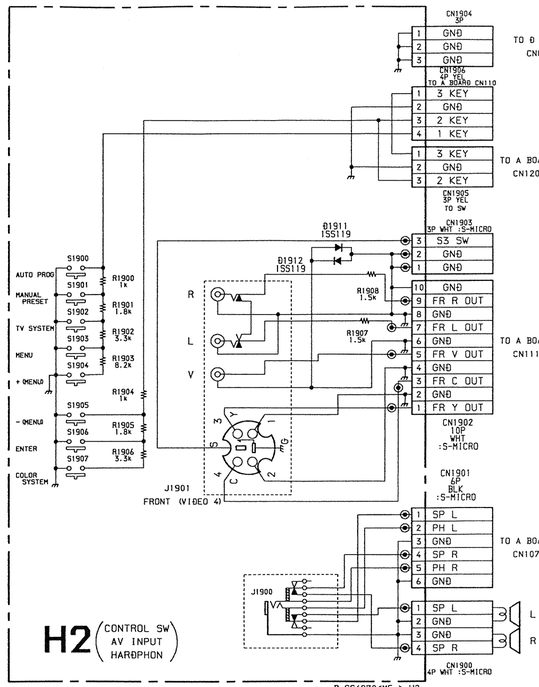












• D BOARD WAVEFORMS

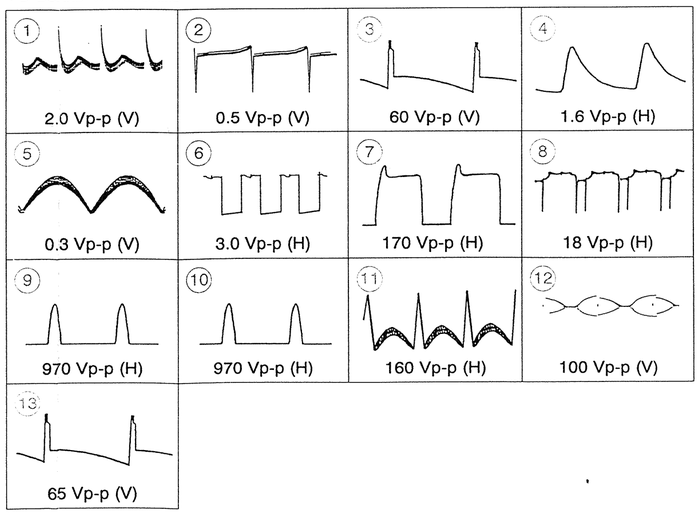
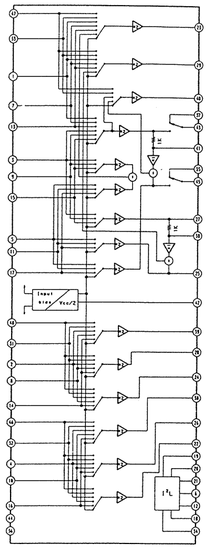

1 2.0 Vp-p (V)
2 0.5 Vp-p (V)
3 60 Vp-p (V)
4 1.6 Vp-p (H)
5 0.3 Vp-p (V)
6 3.0 Vp-p (H)
7 170 Vp-p (H)
8 18 Vp-p (H)
9 970 Vp-p (H)
10 970 Vp-p (H)
11 160 Vp-p (H)
12 100 Vp-p (V)
13 65 Vp-p (V)

Diagram of A Board

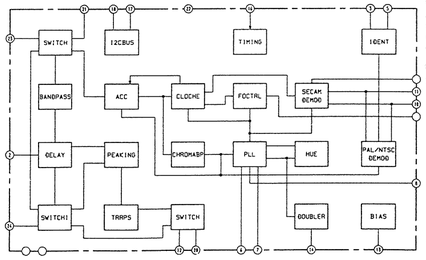
AVEFORMS

5 Vp-p (H)	(2) 2.0 Vp-p (H)	(3) PAL SECAM NTSC4.43 2.0 Vp-p (H)	(3) NTSC3.58 1.75 Vp-p (H)
2.25 Vp-p (H)	(5) 2.25 Vp-p (H)	(6) 2.0 Vp-p	(7) PAL SECAM NTSC4.43 2.0 Vp-p (H)
(7) NTSC3.58 1.75 Vp-p (H)	(8) 1.2 Vp-p (H)	(9) PAL SECAM NTSC4.43 1.1 Vp-p (H)	(9) NTSC3.58 0.8 Vp-p (H)
(10) 1.2 Vp-p (H)	(11) 0.8 Vp-p (H)	(12) 0.9 Vp-p (H)	(13) 0.8 Vp-p (H)
(14) 0.9 Vp-p (H)	(15) 1.6 Vp-p (H)	(16) 1.3 Vp-p	(17) 3.2 Vp-p (H)
(18) 3.2 Vp-p (H)	(19) 3.2 Vp-p (H)		

A Board IC201 CXA1545AS



A Board IC301 TDA9145



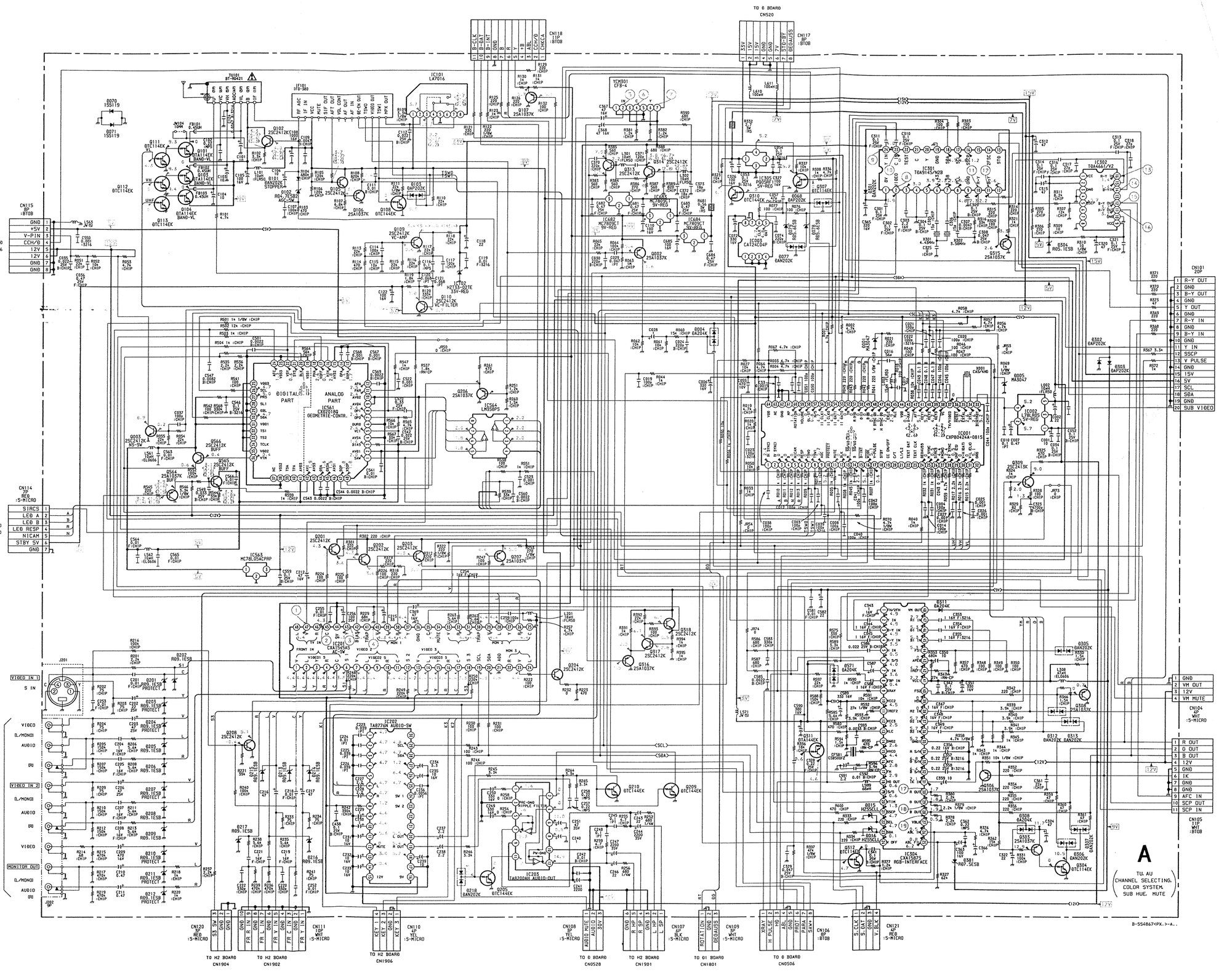
Schematic diagrams

D F1 F2

← H1 H2 boards

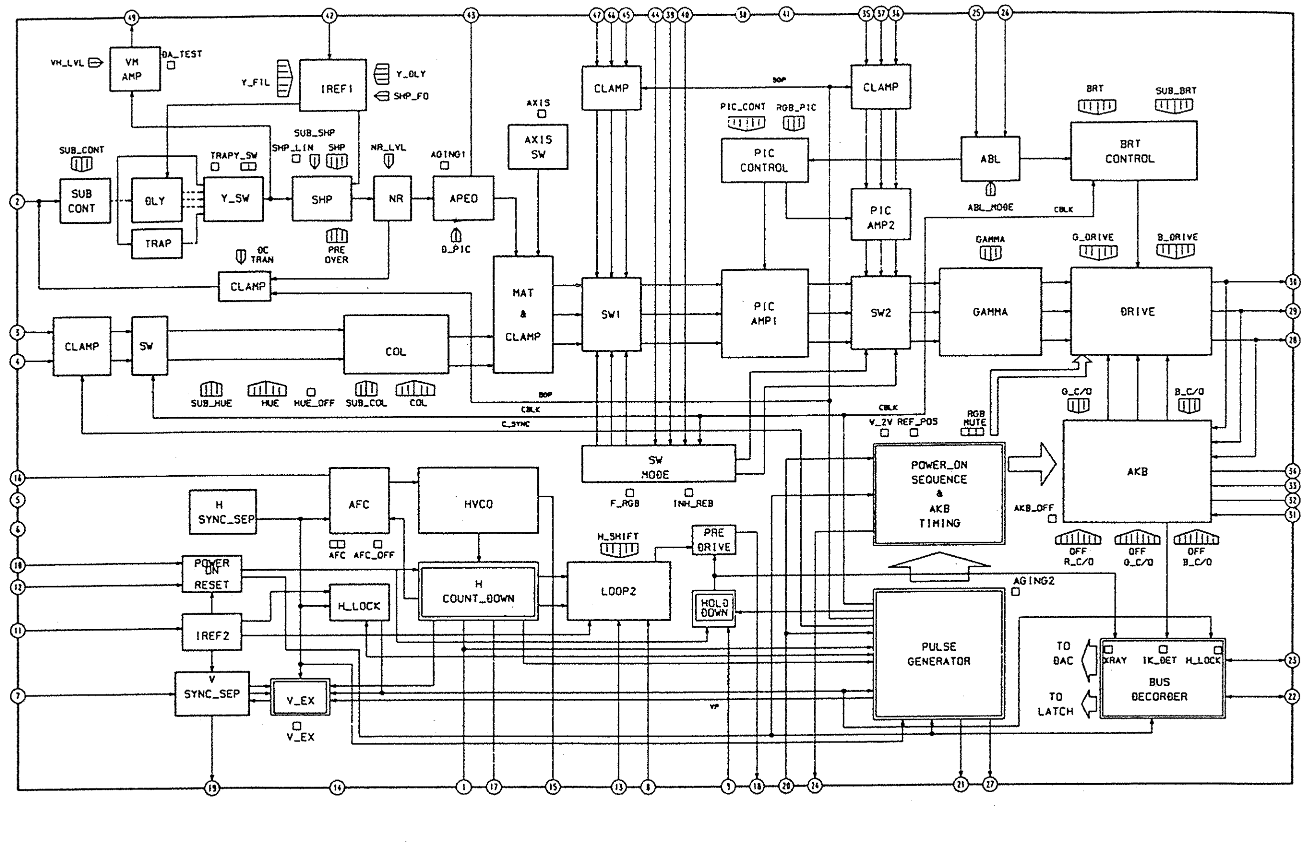
Schematic diagram

A board →


TO G BOARD
CN520
CN117
8P
:BTOB
CN118
11P
:BTOB
CN115
8P
:BTOB
TO G BOARD
CN526
CN114
7P
REG
:S-MICRO
TO H1 BOARD
CN900
CN101
20P
TO P BOARD
CN1401
CN104
4P
WHT
:S-MICRO
TO VM BOARD
CN1762
CN105
11P
WHT
:BTOB
TO A2 BOARD
CN2101
CN120
3P
RED
:S-MICRO
TO H2 BOARD
CN1904
CN111
10P
WHT
:S-MICRO
TO H2 BOARD
CN1902
CN110
4P
YEL
:S-MICRO
TO H2 BOARD
CN1906
CN108
3P
YEL
:S-MICRO
TO G BOARD
CN0528
CN107
6P
BLK
:S-MICRO
TO H2 BOARD
CN1901
CN109
3P
WHT
:S-MICRO
TO G1 BOARD
CN1801
CN106
10P
:BTOB
TO G BOARD
CN0506
CN121
4P
RED
:S-MICRO
DIGITAL(5V) PART
ANALOG PART
IC561
CX20218D0
GEOMETRIE CONTR.
IC563
MC78L05ACPRP
IC564
LA6358PS
IC565
LA6324M
IC566
LA6356
IC567
LA6324M
IC568
LA6356
IC201
CXA1645AS
AC-SW
IC202
TA8220AK
AUDIO-OUT
IC202
TA8772AN
AUDIO-SW
IC501
T0A9145/N2B
IC502
T0A4667/YZ
IC503
CAT24C04P
IC504
CXA1607S
RGB-INTERFACE
IC001
CXP80424A-081S
A
TU. AU
CHANNEL SELECTING.
COLOR SYSTEM.
SUB HUE. MUTE
B-5548&7<PX.>-A..

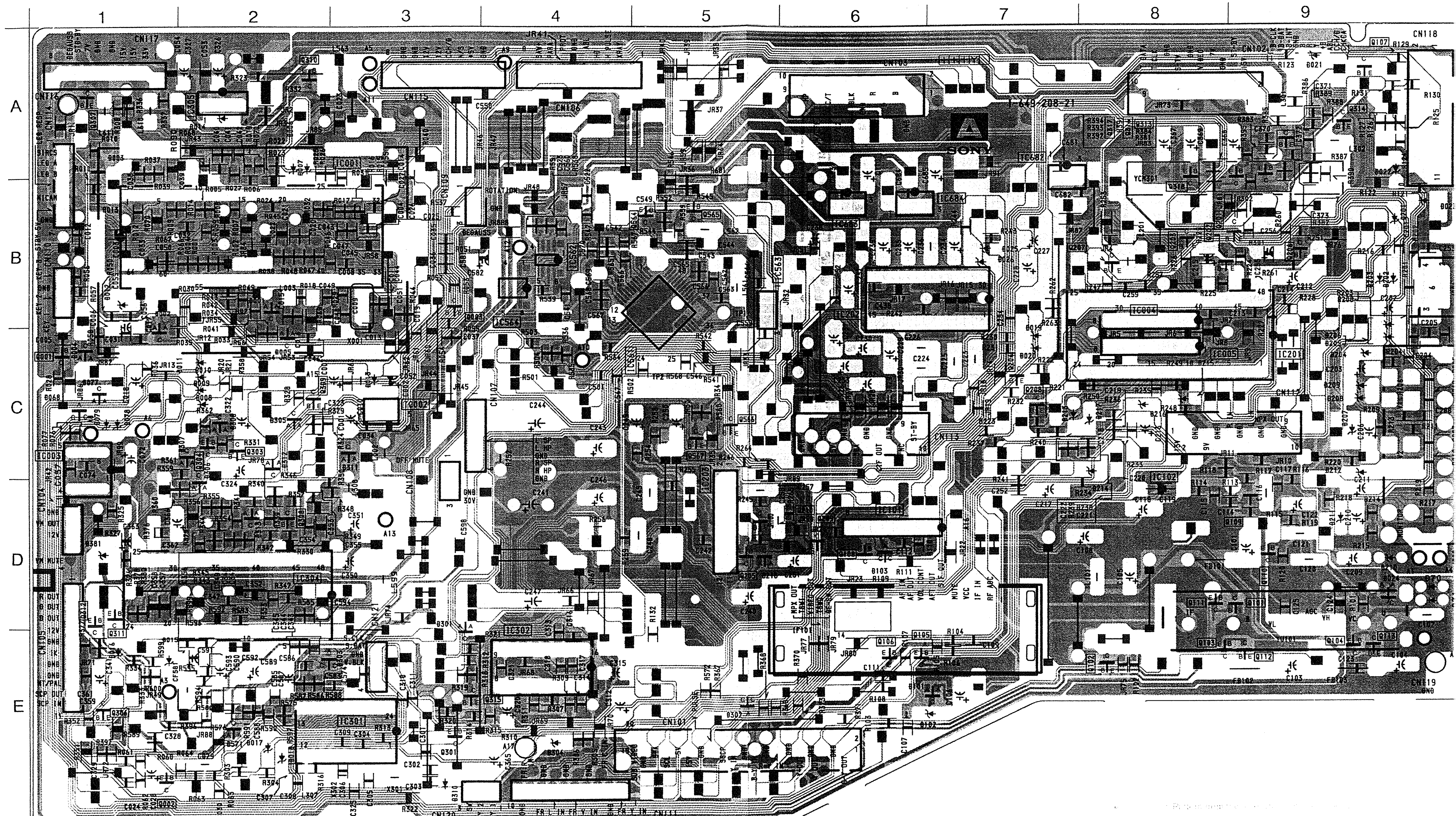
A TU, AU, CHANNEL SELECTION, COLOR SYSTEM, SUB HUE, MUTE

A Board IC304 CXA1587S



PRINTED WIRING BOARDS

– A Board –



• ░ : Pattern of the rear side.

• A BOARD

IC	
IC001	B – 2
IC002	C – 3
IC003	C – 1
IC101	D – 6
IC102	C – 8
IC201	C – 9
IC202	B – 6
IC203	D – 5
IC301	E – 3
IC302	E – 4
IC304	D – 2
IC305	A – 2
IC561	C – 5
IC563	B – 5
IC564	B – 4
IC682	A – 7
IC683	B – 6
IC684	B – 6

TRANSISTOR	
Q002	E – 1
Q003	B – 3
Q101	D – 9
Q102	E – 8
Q103	E – 9
Q104	E – 9
Q105	E – 6
Q106	E – 6
Q107	A – 9
Q108	D – 6
Q109	D – 9
Q110	D – 9
Q111	D – 9
Q112	E – 9
Q113	E – 9
Q201	B – 9
Q202	B – 8
Q203	B – 8
Q204	C – 7
Q205	D – 5
Q206	B – 9
Q207	B – 8
Q208	C – 7
Q209	D – 6
Q210	D – 5
Q303	C – 2
Q304	C – 2
Q306	E – 1
Q307	A – 1
Q308	D – 2
Q309	C – 2
Q310	A – 2
Q311	D – 1
Q312	D – 1
Q313	B – 9
Q314	A – 9
Q315	E – 3
Q316	A – 9
Q317	A – 9
Q318	A – 8
Q564	B – 5
Q565	B – 5
Q566	C – 5

DIODE	
D001	B – 2
D004	C – 1
D005	C – 2
D015	E – 1
D016	E – 1
D068	C – 1
D077	C – 1
D078	C – 1
D079	C – 1
D101	E – 7
D102	E – 6
D103	D – 6
D201	B – 9
D202	B – 9
D203	B – 9
D204	C – 9
D205	B – 9
D206	B – 9
D207	C – 9
D208	C – 9
D209	C – 9
D210	D – 9
D211	D – 9
D212	D – 9
D213	C – 8
D214	C – 8
D215	C – 8
D216	C – 8
D217	C – 8
D218	D – 5
D301	D – 3
D302	E – 5
D303	E – 2
D304	E – 4
D305	C – 2
D306	D – 2
D307	C – 2
D308	C – 2
D311	C – 3
D312	C – 2
D313	C – 2
D381	D – 1
D571	E – 2

IF BLOCK	
IF101	D – 6

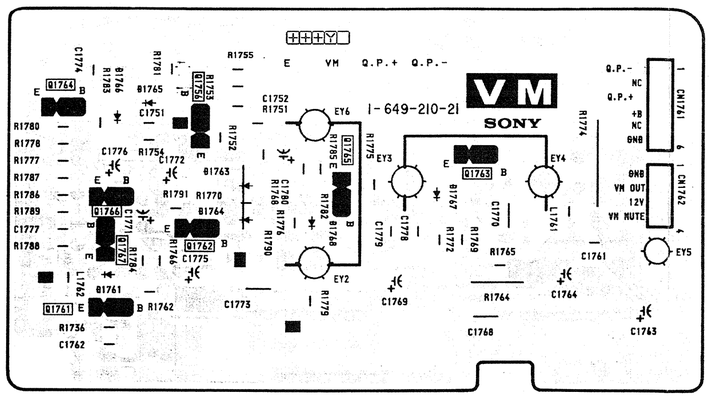
TUNER	
TU101	E – 9

CRYSTAL	
X001	C – 3
X301	E – 3
X302	E – 2

VM [VM OUT]

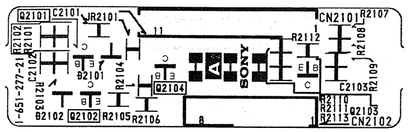
PRINTED WIRING BOARDS

– VM Board –



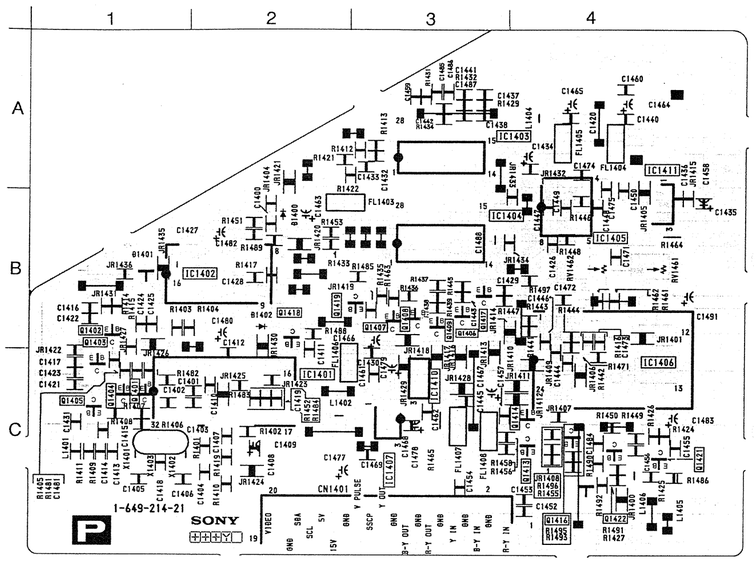
A2 [R, G, B IN/OUT, SCP IN/OUT]

– A2 Board –



P [P IN P]

– P Board –



• P BOARD

IC				DIODE	
IC1401	C – 2	Q1403	C – 1	D1400	B – 2
IC1402	B – 2	Q1404	C – 1	D1401	B – 1
IC1403	A – 3	Q1405	C – 1		
IC1404	B – 3	Q1406	B – 3	CRYSTAL	
IC1405	B – 4	Q1407	B – 3	X1401	C – 1
IC1406	C – 4	Q1408	B – 3	X1402	C – 1
IC1407	C – 3	Q1409	B – 3		
IC1410	C – 3	Q1413	C – 4		
IC1411	B – 4	Q1414	C – 4		
		Q1416	C – 4		
TRANSISTOR		Q1417	B – 3		
		Q1418	B – 2		
Q1401	C – 1	Q1419	B – 3		
Q1402	B – 1	Q1420			
		Q1421	C – 4		
		Q1422	C – 4		

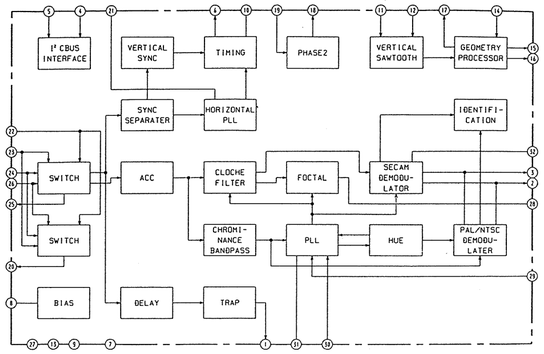
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

C D E F G H I J K L M N O P

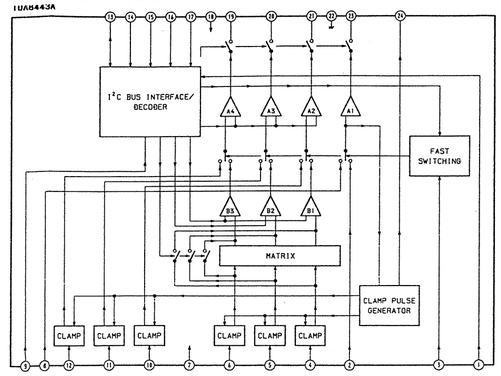
• P BOARD WAVEFORMS

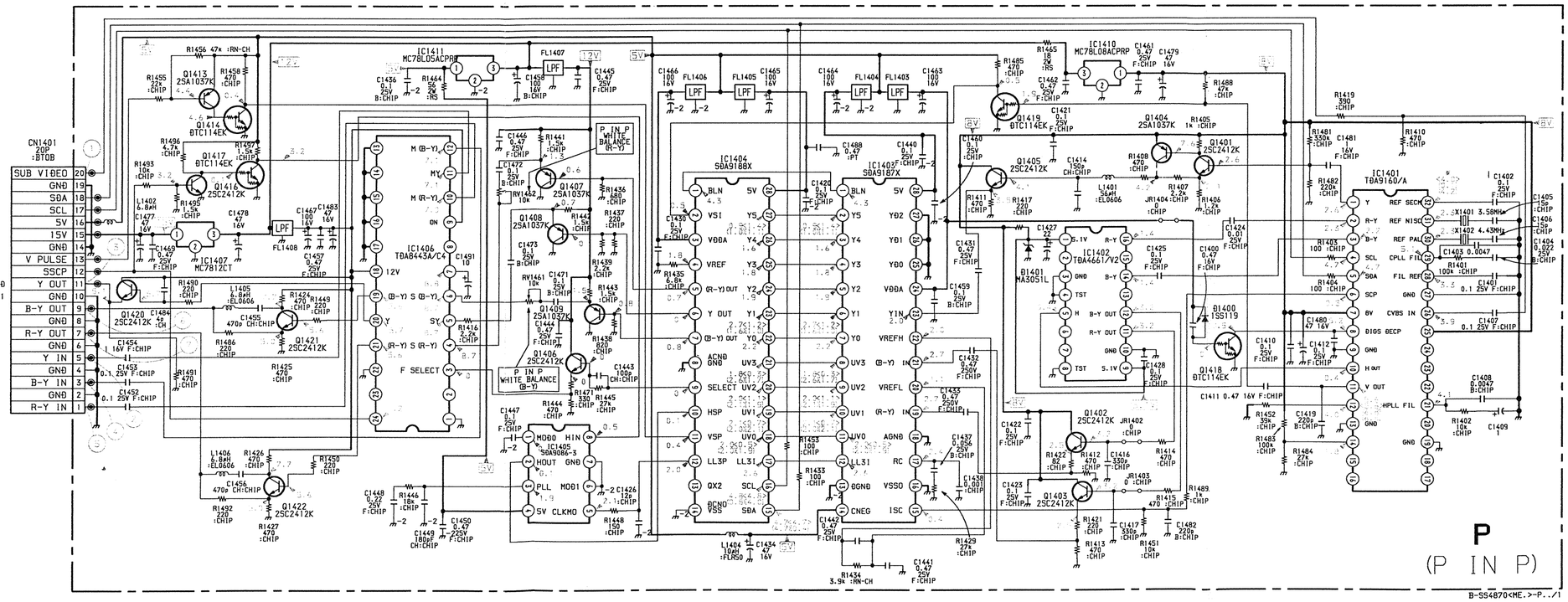
① 2.0 Vp-p (H)	② PAL SECAM NYSC3.58 0.4 Vp-p (H)	② NTSC4.43 0.4 Vp-p (H)	③ PAL SECAM NYSC3.58 0.4 Vp-p (H)
③ NTSC4.43 0.4 Vp-p (H)	④ 1.5 Vp-p (H)	⑤ 1.3 Vp-p (H)	⑥ 1.5 Vp-p (H)
⑦ 1.3 Vp-p (H)			

P Board IC1401 TDA9160

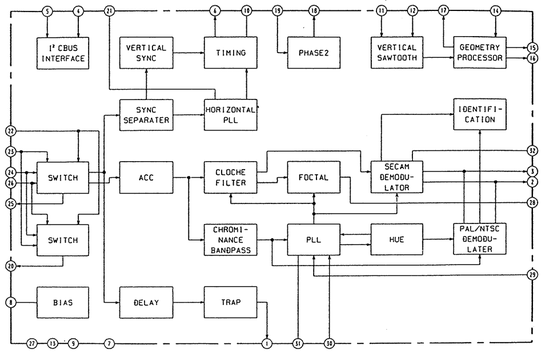


P Board IC1406 TDA8443A

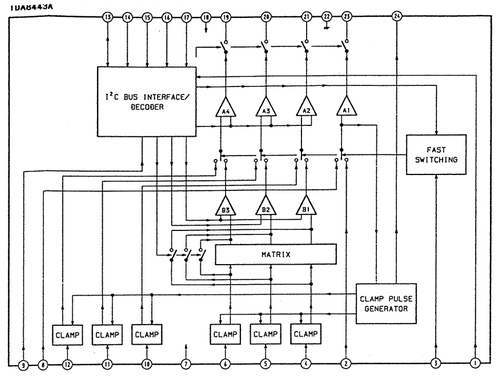


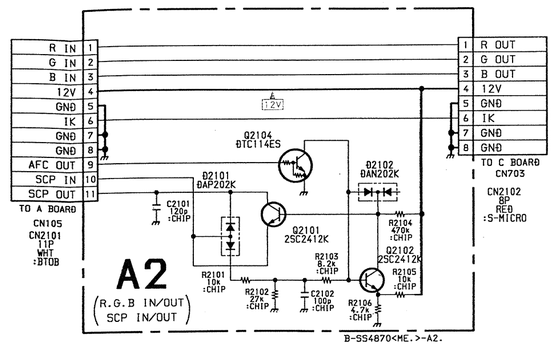


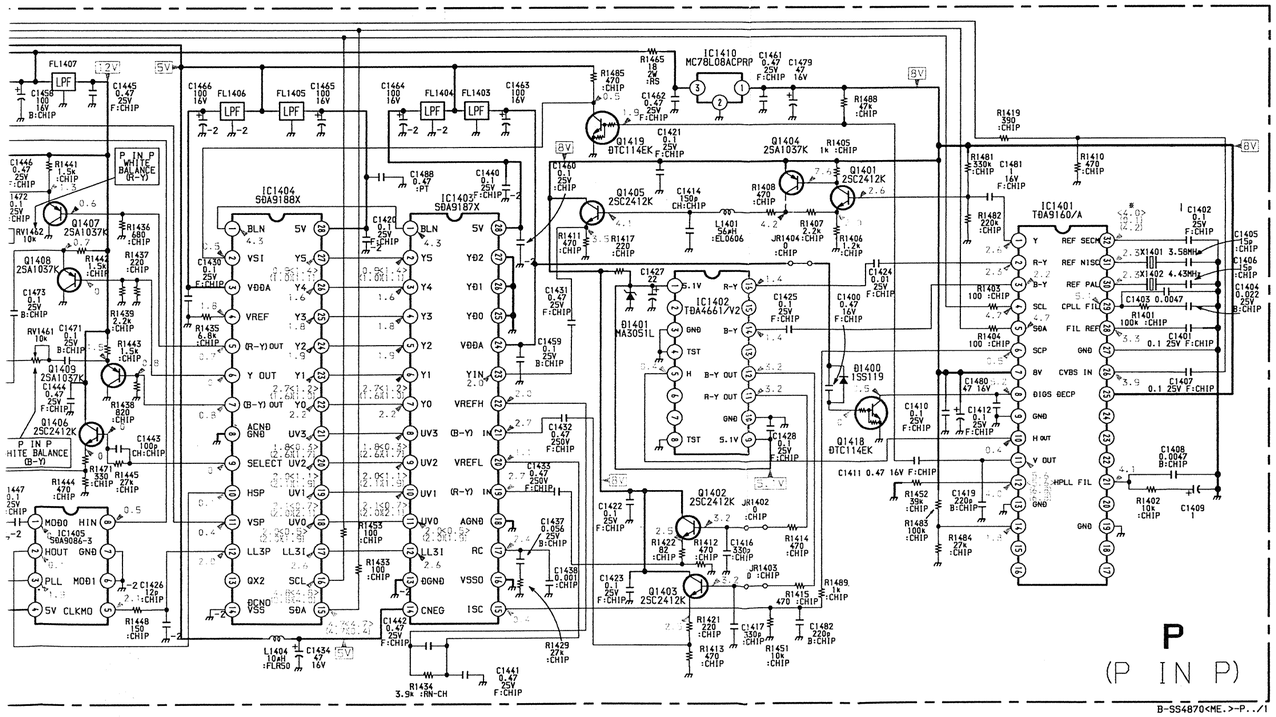
P Board IC1401 TDA9160

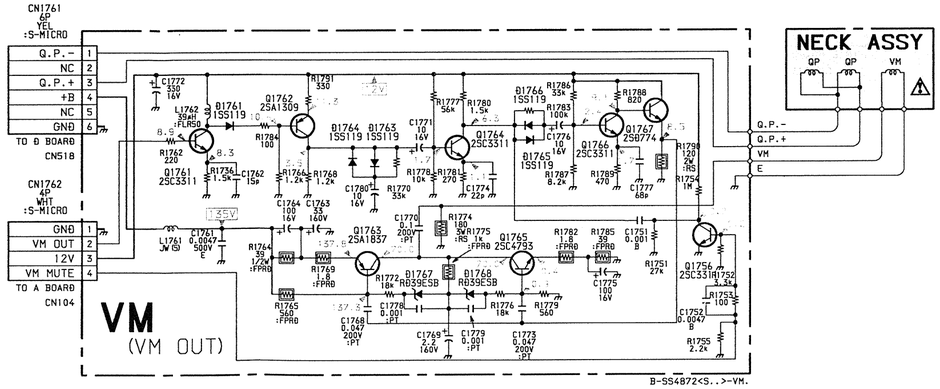


P Board IC1406 TDA8443A

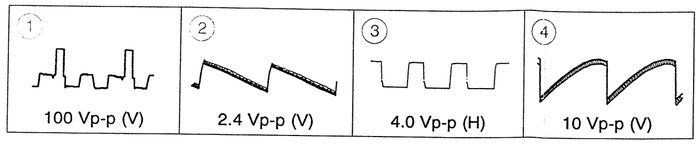


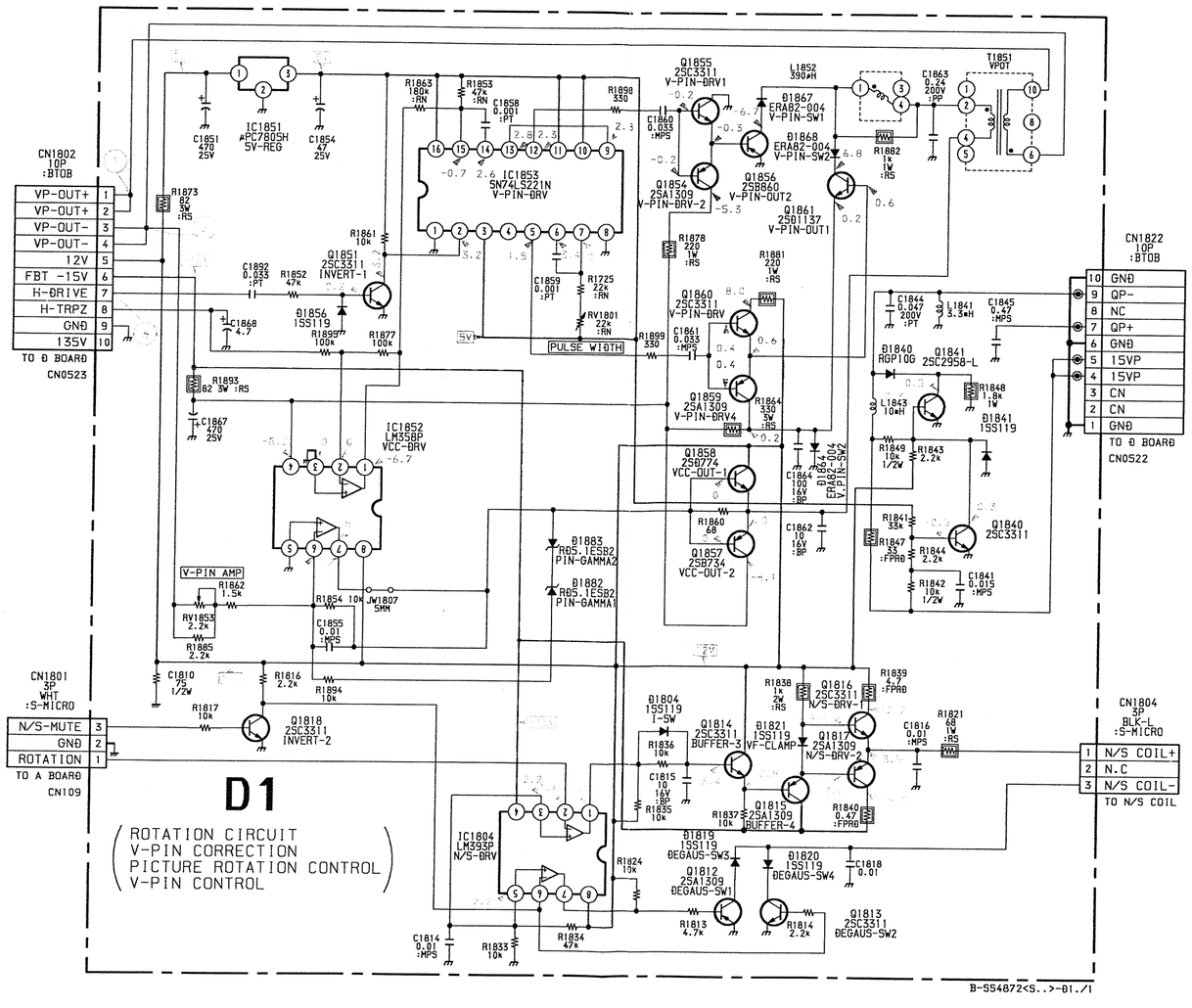






• D1 BOARD WAVEFORMS

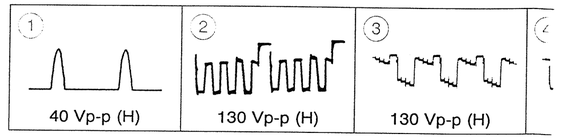


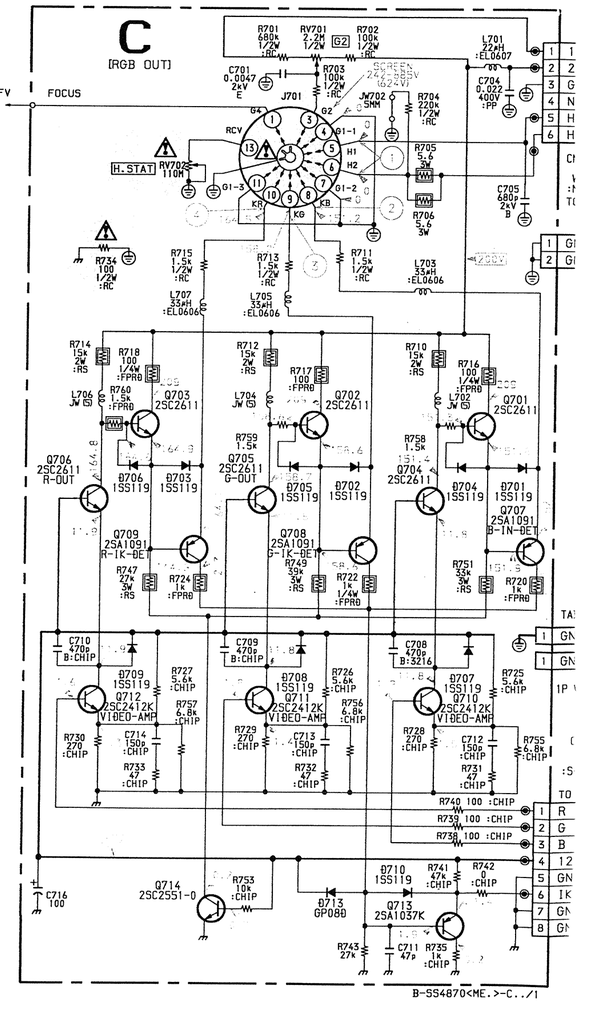


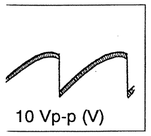
Schematic diagrams
A 2 P VM boards

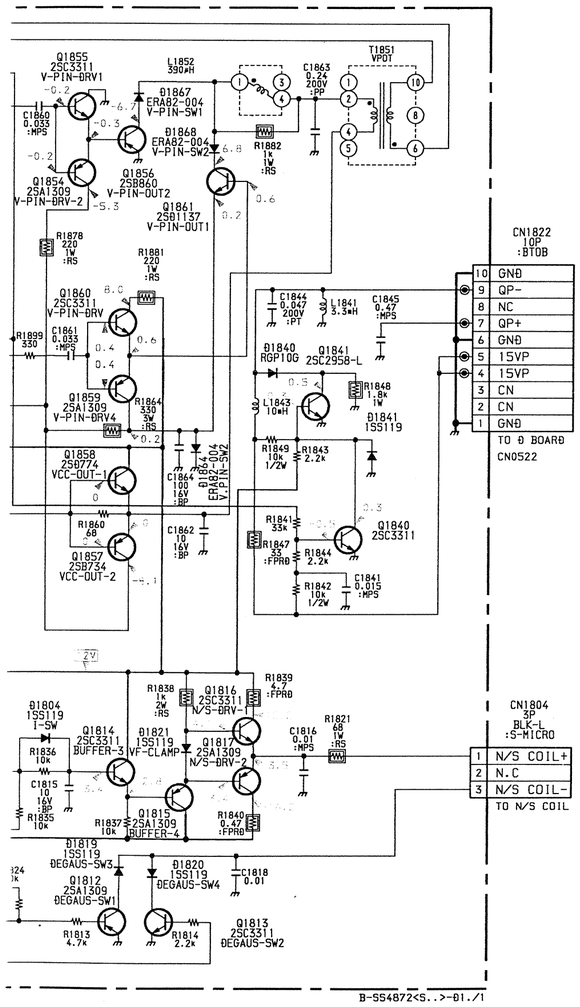
Schematic diagrams
C D 1 boards ➡

• C BOARD WAVEFORMS

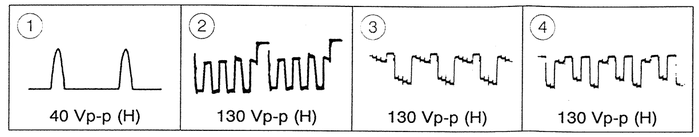


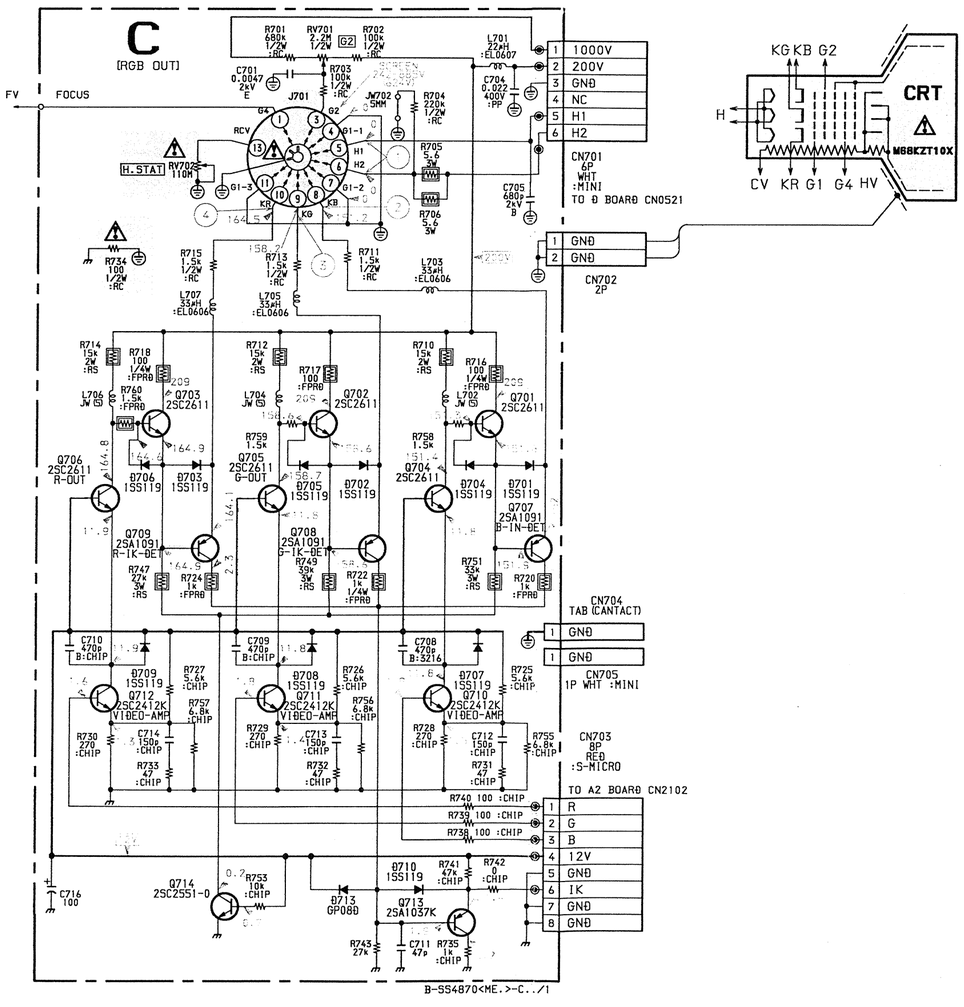






• C BOARD WAVEFORMS





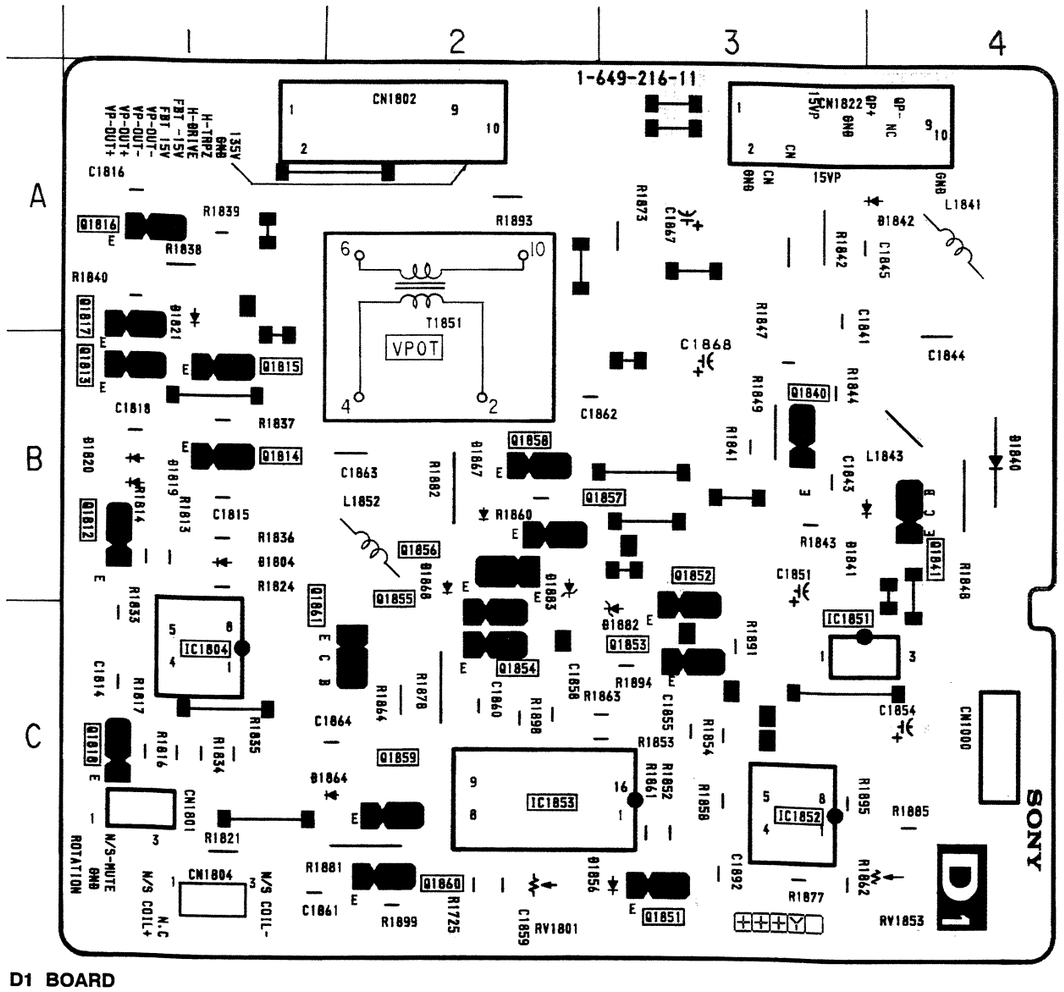
KV-K29CF1
RM-845P

D1 [ROTATION CIRCUIT, V-PIN CORRECTION, PICTURE ROTATION CONTROL, V-PIN CONTROL]

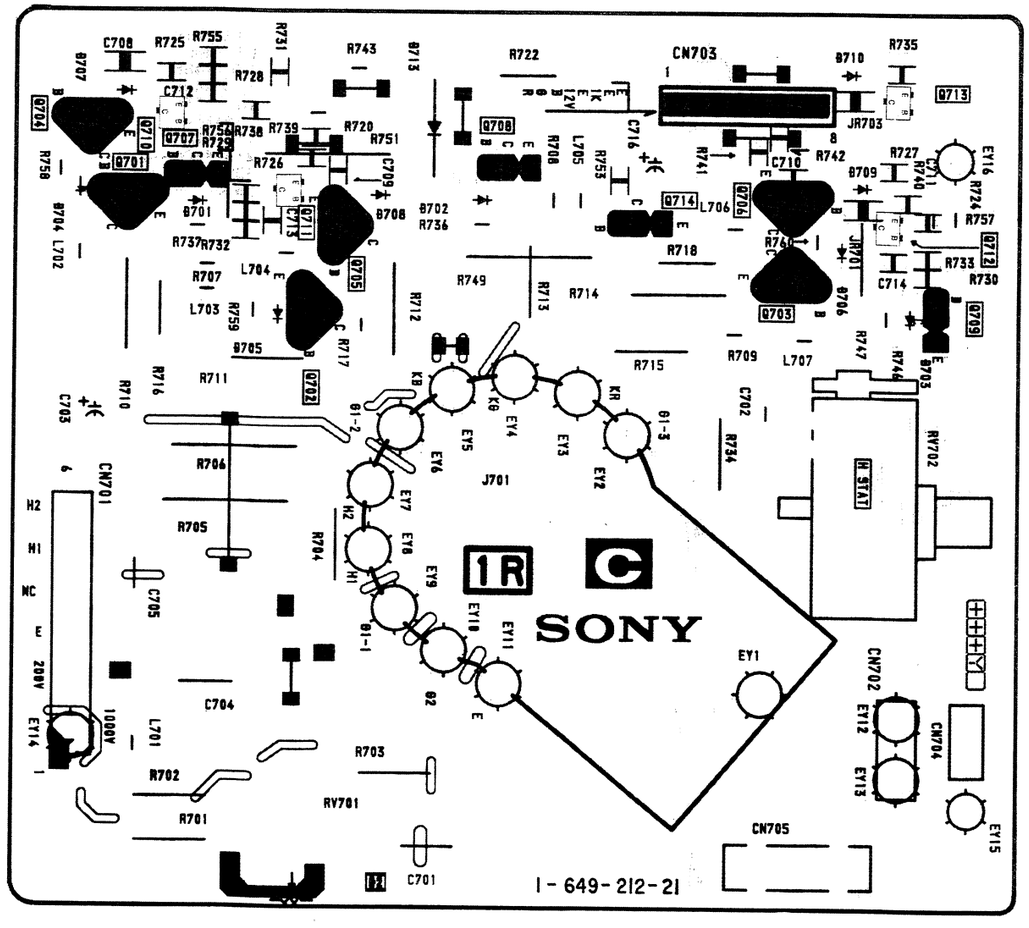
C [R, G, B OUT]

PRINTED WIRING BOARDS

– D1 Board –



– C Board –



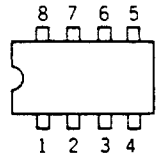
• **D1 BOARD**

IC			
IC1804	C – 1	Q1851	C – 3
IC1851	C – 3	Q1854	C – 2
IC1852	C – 3	Q1855	C – 2
IC1853	C – 2	Q1856	B – 2
TRANSISTOR		Q1857	B – 2
Q1812	B – 1	Q1858	B – 2
Q1813	B – 1	Q1859	C – 2
Q1814	B – 1	Q1860	C – 2
Q1815	B – 1	Q1861	C – 2
Q1816	A – 1	**DIODE**	
Q1817	A – 1	D1804	B – 1
Q1818	C – 1	D1819	B – 1
Q1840	B – 3	D1820	B – 1
Q1841	B – 4	D1821	A – 1
		D1840	B – 4
		D1841	B – 3
		D1856	C – 3
		D1864	C – 2
		D1867	B – 2
		D1868	B – 2
		D1882	C – 3
		D1883	B – 2
		VARIABLE RESISTOR	
		RV1801	C – 2
		RV1853	C – 4

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

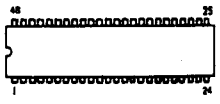
6-5. SEMICONDUCTORS

CAT24C04P
LM358P
LM393P
SDA9086-3
μPC358C
μPC393C

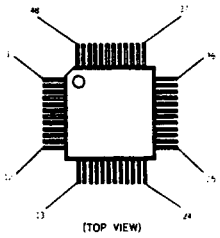


(Top view)

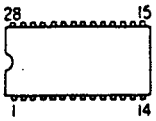
CXA1545AS
CXA1587S



CXD2018Q

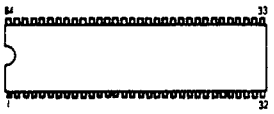


SDA9187X
SDA9188X



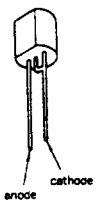
(Top view)

CXP80424
CXP80424-SV4652

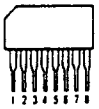


(Top view)

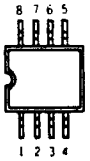
HZT33-02TE
μPC574J



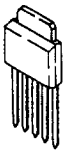
LA7016



LM358PS



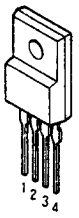
L78LR05D-MA



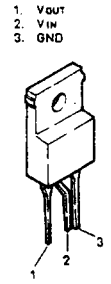
MC78L05ACPRP
NJM78L05A

MC7809CT
MC7812CT
NJM78M09FA
TA7805S
μPC7805H

PQ05RF1



SE135N-LF12



SN74LS221N
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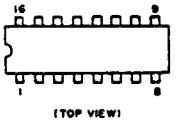
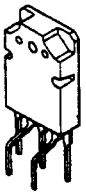
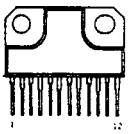
TDA9821



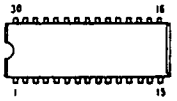
STR-81145A



TA8200AH

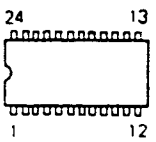


TA8776N



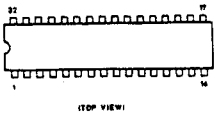
(Top view)

TDA8443A/C4
TDA9145
TDA9145/N2B



(Top view)

TDA9160/N2



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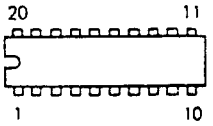
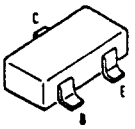


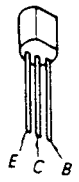
(Top view)

DTA114EK
DTA144EK
DTC114EK
DTC144EK
2SA1037K
2SA1162-G
2SC1623-L5L6
2SC2412K
2SC2412K-QR
2SC2413K
2SC2413KQ



DTC114ES
DTC144ES

2SA1091-O
2SC2551-O



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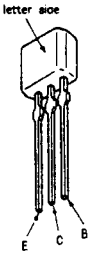
2SA1309A
2SC2785-HFE
2SC3311A



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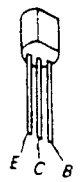

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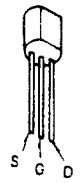

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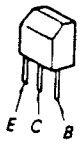
2SC2958-L
2SD774-34



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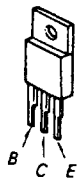
2SB860



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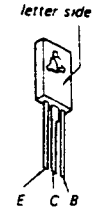
2SC2688-LK
2SC3502-E
2SC3601-E



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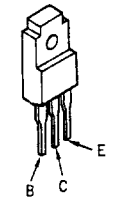
2SC4793
2SD1137



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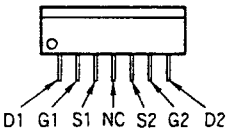
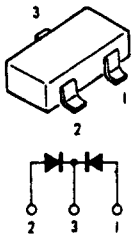
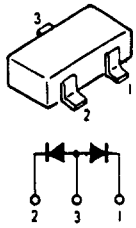


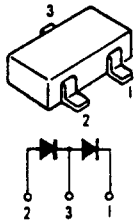
DAN202K



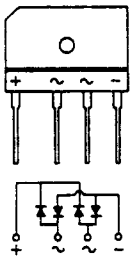
DAP202K



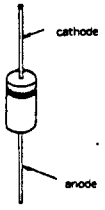
DA204K



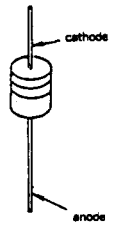
D4SB60L



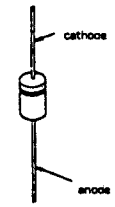
EGP20G
EG01
EL-1Z
EU-1Z
EU-2
GP08D
RGP15G
RGP15J



ERA82-004
ERA85-009
HZS5CLL-TD
RD10ES-B3
RD3.6ES-B1
RD33ES-B2
RD39ES-B
RD39ES-B2
RD4.7ES-B2
RD5.1ES-B
RD5.1ES-B1
RD5.1ES-B2
RD5.6ES-B
RD7.5ES-B
RD7.5ES-B1
RD7.5ES-B2
RD7.5ES-B3
RD9.1ES-B
RD9.1ESL
1SS119
1SS133



ERC06-15S
RGP02-20EL-6394



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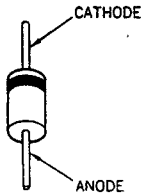
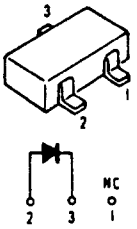
RGP02-17
RGP02-17EL-6433
RU4AM
RU4DS

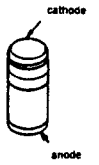


GP08
U05G

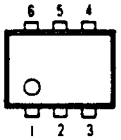
MA3047
RD13M-B2
RD4.7M-B2



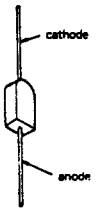
MA3051L-TX



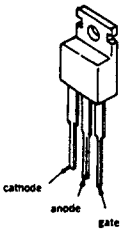
PC111LS
PC111YS



RM11C

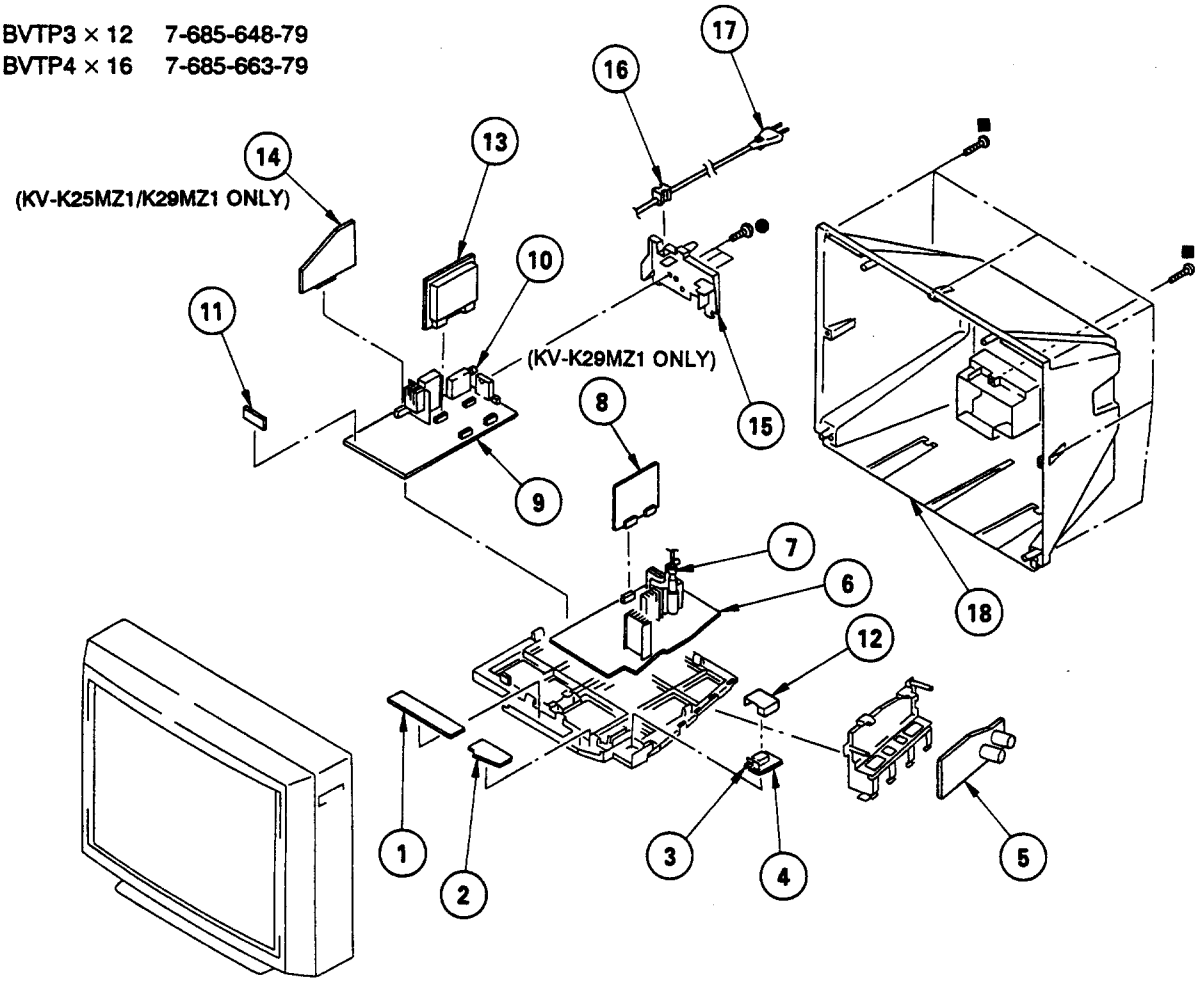


5P4M
5P6M



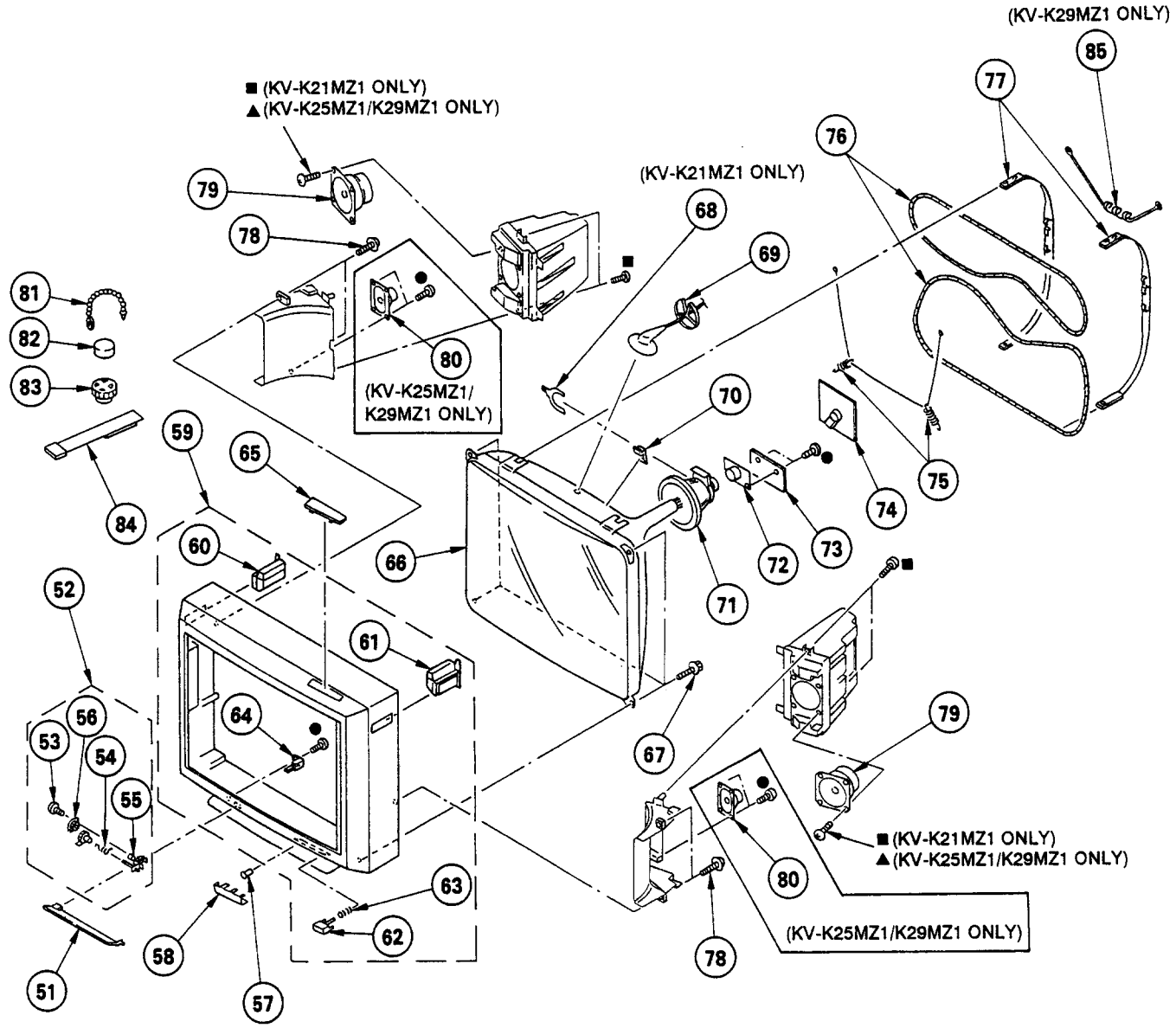
7-1. CHASSIS

●: BVTP3 × 12 7-685-648-79
■: BVTP4 × 16 7-685-663-79



7-2. PICTURE TUBE

●: BVTP3 × 12 7-685-648-79
▲: BVTP4 × 12 7-685-661-14
■: BVTP4 × 16 7-685-663-79



KV-K21MZ1/K25MZ1/K29MZ1

RM-845T RM-845P RM-845P

SONY

SERVICE MANUAL

Thailand Model

KV-K21MZ1
Chassis No. SCC-G70C-A
KV-K25MZ1
Chassis No. SCC-G70A-A
KV-K29MZ1
Chassis No. SCC-G70B-A

SUPPLEMENT-1

SUBJECT : PART CHANGE

File this supplement with the service manual.

– INTRODUCTION -

PICTURE TUBE OF PART CHANGE : KV-K25MZ1 only

☛ : Changed portion

SECTION 7 EXPLODED VIEWS

7-2. PICTURE TUBE (See page 70)

REF. NO.	PART NO.	DESCRIPTION
66	⚠ 8-733-242-05	PICTURE TUBE (A60KWL10X) (KV-K25MZ1 only)

SECTION 8 ELECTRICAL PARTS LIST

MISCELLANEOUS (See page 90)

REF. NO.	PART NO.	DESCRIPTION
V901	⚠ 8-733-242-05	PICTURE TUBE (A60KWL10X) (KV-K25MZ1 only)

MICROFILM

9-965-531-81

Sony Corporation
Consumer A&V Products Company
TV & Display Products Div.

English
94LE02029-1
Printed in Japan
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SONY
SERVICE MANUAL

G3F CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-K21MZ1	RM-845T	Thailand	SCC-G70C-A
KV-K25MZ1	RM-845P	Thailand	SCC-G70A-A
KV-K29MZ1	RM-845P	Thailand	SCC-G70B-A

SUPPLEMENT- 2

SUBJECT: PART CHANGE

File this supplement with the Service manual.

INTRODUCTION: Change the CRT part no.(KV-K29MZ1 only)

☛:Indicates changed portion

SECTION 7. EXPLODED VIEWS

7-2.PICTURE TUBE (See page 70)

REF NO.	PART NO.	DESCRIPTION
66	⚠ [illegible]	PICTURE TUBE (M68KZT71X)(KV-K29MZ1)

SECTION 8. ELECTRICAL PARTS LIST

MISCELLANEOUS (See page 90)

REF NO.	PART NO.	DESCRIPTION
V001	⚠ [illegible]	PICTURE TUBE (M68KZT71X)(KV-K29MZ1)

MICROFILM

※ Please file according to model size. ..... ■

21 | 25 | 29

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Display Company
Quality Engineering Dept.

9-965-531-82

English
97DE02030-1
Printed in JAPAN

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SONY
SERVICE MANUAL

G3F CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-K21MZ1	RM-845P	S	SCC-G70C-A				
KV-K25MZ1	RM-845P	S	SCC-G70A-A				
KV-K29MZ1	RM-845P	S	SCC-G70B-A				

SUPPLEMENT-3

SUBJECT : PART CHANGE

File this supplement with the Service Manual.

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- MF : μF, PF : μμF

COILS
- MMH : mH, UH : μH

(See page 73)

REF. NO.	PART NO.	DESCRIPTION			REMARK
C2617	1-117-753-11	ELECT	470MF	20%	450V (KV-K21MZ1)

MICROFILM

9-965-531-83

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Display Company
TV Display Business Asia

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